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Education of the Conqueror*

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It is a real privilege to have this opportunity to come to Missouri—to western Missouri, the capital of the United States. A Missouri doughboy is our President; doughboys, veterans of World War I, run our country. But the G.I.'s are coming home. Soon they will replace the doughboys on school boards, in legislatures, at posts of leadership in all walks of life. What kind of country will we turn over to them? What kind of country will they, in turn, make? What sort of education will they want? What should they want? Is there anything in our experience, or in world experience, that will help them in making these choices? Are there good examples to imitate? Are there bad examples to avoid? These are the problems that I propose we think about together today.

Doughboy to G.I.—where did this word "doughboy" come from? A soldier in Wellington's Rifle Brigade, on the retreat from Talavera in the year 1809, during the Peninsular War, made the following note in his diary:

> For bread we took corn from the fields, and having no proper means of winnowing and grinding it, were obliged . . . to rub out the ears between our hands and pound them between stones to make dough . . ., from which wretched practice we christened the place Dough Boy Hill.[1]

An officer of the same outfit left a similar record: "Here for three weeks we nearly starved, and our position

*An address delivered at the Kansas City and Chicago meetings of the American Association of School Administrators. We present it here as an interesting sequel to Dean Russell's article, "The Re-education of the Germans," which appeared in the March, 1946, *Teachers College Record*.

[1] Richard Aldington, *The Duke*, p. 151. New York: The Macmillan Company, 1943.

received the name of Dough Boy Hill."

This is straight from the Horse's mouth. What does that expression mean? The control of the British Army in Wellington's day rested in a clique of old generals headed by the Duke of York. Their headquarters was in a building in Whitehall known as the Horse Guards—whence the expression that I have just used, for an authoritative, if trivial, statement. All during his younger days, in India, on the Peninsula, in Southern France, and even at Waterloo, Wellington had to battle a group of old generals. "Having been conspicuous failures on active service," says Aldington, "they exercised their old age in diligent and pedantic insistence on obsolete methods and traditions which ought to have been abolished." They turned victory into defeat, replaced ability by incompetence; fainthearted, they forced the courageous to turn back. Mostly it was too little and too late.

But the Duke, in his later years and old age, in turn became the leader of the Horse Guards. Says Richard Aldington:

> The whooping horse laugh of the brigadiers, the two-fingered salute of corps commanders, the religion of fox hunting, the tendency for officers to be gentlemen and to look on other ranks as His Majesty's lackeys in uniform, come from the Duke. So lasting was this influence that the British Expeditionary Force of 1914 was a slightly modernized version of the six divisions of the Peninsular Army, and relied for its fire-power largely on the musketry with which the Duke had accomplished such military miracles.[2]

I do not need to labor this point. The records show that Maréchal Bazaine, before Sedan in 1871, drilled the French madly along Napoleonic lines—with some slight modification based on desert warfare in North Africa—while the Germans, heeding the experience of Grant and Lee, and particularly of Stonewall Jackson, were adapting their training and strategy to a new technological development, the railroad and various devices for rapid-fire.

A defeated nation turns its back on the past. Its leaders were wrong. Its methods were wrong. Something new must be tried. A victorious nation tries to return to normalcy. Its leaders were all right; its tactics proved; its plans successful. Don't take out a winning pitcher. Don't change horses in the middle of a stream.

I remember once hearing of a new golf game called "Drink and Smell." The rules were to have two players, two caddies, two bags of clubs, and one large bottle of whiskey. After the first hole, the winner got a drink, and the loser just a smell. The same procedure was followed on the second hole and thereafter. If the same player lost three or four holes in succession, he would be *bound* to win the next. So, in a sense, has it been in the field of warfare. Success brings a trend toward tradition; failure, a search for the new; with the certain result of ultimate alternation of victory and defeat.

[2] Aldington, *op. cit.*, p. 354.

This principle applies also to education. The main reforms of education in Prussia—from which resulted the horrible history of this criminal nation—date from Fichte's *Reden*, based upon the defeats inflicted by Napoleon. The main reforms of education in France, up to the present, date from the year 1871, the debacle at Sedan and the occupation of Paris by Bismarck.

This principle in operation was plain to be seen after World War I. In Austria or Germany or Hungary or Bulgaria people would ply you with questions about education in the United States. How did you accomplish this? What would you advise about that? And in each country were instituted substantial educational reforms, new school organization, new curricula, new plans for teacher preparation, new programs for public health and welfare. But if you went to Paris or London, or particularly Edinburgh, the inhabitants would welcome you politely and ask you what was it that you wanted to see. They would start a conversation with, "The trouble with your education is . . .," and being from a conquering country, naturally, I wanted to tell the world how we had done it .

The countries in the world today can be divided into five groups: the *Defeated*—Germany, Bulgaria, Italy, and Japan; the *Neutrals*—such as Spain, Sweden, and Switzerland; the *Occupied*—such as Belgium, Norway, and Greece; the *Allied*—who took a minor part in the fighting, such as Portugal, Brazil, Iran, and Mexico; and the *Conquering*—France, China, Great Britain, Soviet Russia, and the United States. The Defeated are not going to look back. What they did was wrong; their leaders were wrong. Bit by bit as we proceed from Neutral to Occupied to Allied their eyes will shift progressively from the future to the past.

Among the conquerors it is likely that there will also be some divergence in the direction of their view. France, China, and Russia lost battle after battle, had much of their mainland occupied, suffered tremendous personal losses. Britain, while not occupied, was subjected to devastating air attack—once early in the war, in the Battle of Britain, and once late, in the Battle of the V-1's and V-2's. All four—China, France, Soviet Russia, and Britain—were severely frightened. For long periods only a flicker of hope remained. Read the secret speech of Winston Churchill recently published in *Life* magazine.

Of all the conquerors, the United States stands alone. We were not invaded, except for the Philippines, a few Pacific Islands, and the tip of Alaska. We were not bombed. The news of the immensity of the disaster of Pearl Harbor was kept from us; the early naval losses around Guadalcanal and the Coral Sea were shrouded in censorship; only the affairs around Kasserine Pass and the Bastogne Bulge gave us any qualms, and they were soon forgotten. We are proud; we are confident; we have not been scared.

> We don't want to fight, but
> By Jingo, if they do,

We've got the ships,
We've got the men, and
We've got the money, too.

Also, we have the atom bomb.

Where in all the world is conservatism likely to take hold? Where will it be said that the leaders were faultless? That tactics were sound? That policies were right? Where is it least likely that the pitcher will be changed? Where will be the smallest chance of effecting a business transaction in midstream? Right here in the good old U.S.A.!

Where in all the world is conservatism in education likely to be popular? Where will it be said that old professors and school superintendents are satisfactory? That the course of study is sound? That curriculum revisions are unnecessary? That Horace Mann and McGuffey were right? Right here in the good old U.S.A.! Where are they likely to long for the days of William T. Harris and Greenwood? Right here in old Missouri!

We talk a good deal about the re-education of the Germans. A large commission has gone to Japan to re-educate the Japanese. I grant the importance of the two problems. I appreciate, from personal experience (closer than that of most people), the importance for future world peace of better education of the loco nations. But far more important, I am sure, is the re-education of the Americans, particularly in the face of the conservative reaction that, unwatched and unnoticed, seems certain to set in.

The trouble with the problem is that it is so close to us. We are living with it; we are living in it. Properly assessing our place is like taking one's own pulse. Somehow or other we have to get outside ourselves to look at ourselves. We must be able to assess trends; to have objective standards by which to measure where we go and what we do. Fortunately, I think we can set up some objective standards by which we can measure our degeneracy or our progress; and upon the basis of these standards, we can determine whether we will go along or fight.

By a careful study of the history of education and of comparative education we can find certain societies of the past, and almost up to the present, whose education was geared either to looking forward or to looking backward. We know, for instance, that the early Egyptians and Chinese set up societies that lasted for long periods of time. These societies were strong because they adopted the principle of having each successive generation exactly duplicate the preceding one, and the system of education fitted this program exactly. In more recent times we have seen modern societies adopt similar programs. In Germany, for instance, the great mass of the people were taught to obey, to do as they were told. Certain world empires inflicted this kind of education upon their subject peoples, such as the Dutch in Java and the British in some of their colonial possessions.

Similarly there have been some societies, particularly in times of ferment, that gained great success precisely because they adopted a policy of change,

of looking forward, of adapting to the new; and here, again, the system of education meshed exactly with the program. The most striking examples were the Ottoman Empire and that phase of German social planning that kept the mass of the people controlled and at the same time produced leaders able to look forward and cut red tape.

I do not need to spell out to this audience the characteristics of these two types of society and education. It will be sufficient to list briefly the main elements in common.

The characteristics of an educational plan to fit a backward-looking society are:

1. *Special trust in the old, suspicion of the young, long and slow advancement.* The Senate, the Elders, the Medicine Men hold the power. Youth are kept apart. Young men must sit in the background and keep silent. Only when the fires of youth have been quenched and habit and custom have full sway can they be trusted to speak and share in decisions.

2. *Emphasis on a ruling class.* Power descends from father to son. Power and wealth have special privileges. As for education, there is usually one kind for the privileged and another for the masses. Wealth and political position determine educational opportunity.

3. *Certain peoples—often in large numbers—outside the pale.* Zulus or half castes, Ainus or Indians, Okies or Okinawans—untouchables, beyond the pale. They stand back; they cast their eyes down; but they work, work, work as slaves for the overlords. They receive little schooling, strict discipline, limited opportunity.

4. *The main content of the curriculum is contained in a ritual or in a set of books.* The lore of the Egyptian priests, the Analects of Confucius, the ritual of the Pueblo Indians, the Prussian course of study—whatever it is, must be mastered perfectly by those permitted to learn.

5. *Closely related is the method of teaching*, memoriter work, in which the pupil repeats what he has learned—"His not to reason why, his not to make reply." The procedure is simple. The teacher knows exactly what he wants; the pupil knows exactly what he is supposed to do. No variation is permitted.

These characteristics are very baldly stated. They will not stand out so plainly in postwar America. They will be dressed up, ornamented, disguised. We must learn to look squarely and deeply into the situation and rip off the tinsel.

The characteristics of education to look forward, to adjust to new conditions—to flexibility, adaptability, sensitiveness to change—are almost the exact antithesis of education for conformity. The goal is definitely *not* to bring up one generation exactly like the previous one, but one that is different. Hence,

1. *Education is based not upon a ritual or the contents of a set of books but upon the demands of future society.* The rules are not there to be followed; they must be made up new to meet new conditions. They must be

contrived in the heat of battle, making use of all the new knowledge and techniques available. Hence, such a society

2. *Cannot afford a ruling class—herditary in nature—which holds the power. New ideas must boil up from underneath.* Heredity may have great weight, but the biological sport must be treasured. Every opportunity must be given to ability, under whatever conditions it may appear.

3. *People must have equal opportunity*, regardless of race, creed, or economic ability. Since all ability must be developed, and decisions must be made by the people rather than according to a set of books or ritual, all the people must be educated to assume these responsibilities, and the few exceptionally able ones to go far beyond that.

4. *Ability, not age or reputation, must be the consideration in choosing leaders.* On the whole, younger rather than aged, flexible rather than blind respect for the past.

5. *The method of teaching* should be designed to stimulate flexibility, the questioning attitude, impatience with the past. The learner should be encouraged to vary, to form opinions of his own, to amass knowledge upon problems of real life, real to him. Flexibility and adaptability should be his goal.

These characteristics of forward-moving and backward-moving education have been stated in the extreme. What I am trying to do is to set up a series of measuring sticks whereby we can tell, while we are in the process, whether we are moving forward or backward. Undoubtedly we Americans will continue to pride ourselves on our progressive ways; we will talk a lot about invention and adaptability; but in view of our history, and the history of our education, I think that almost every social pressure will drive us to the Horse Guards' attitude. Pupils and parents, teachers, professors, and school board members will tend to work and think that way.

I should say that our educational system in the main has been very conservative, but we have been a progressive people—inventive, adaptable, sensitive to change. Why? We had a new country to settle. Every successive wave of immigration and settlement had new problems to meet. Our people were always up against something new. We had to make tools and devise machines; we could not order what we wanted from Manchester or Rouen. As we settled one new territory after another, our boys and girls had to adjust, to adapt, to invent.

But not in our education. The little grammar schools and district schools gave the three R's and little else. The early colleges were set up to train young men for the ministry and the law. Each of these professions depends upon tradition and the adjustment of the individual to a body of tradition. Then the colleges expanded, took in students preparing for other walks of life; the high schools were added—little images of the colleges. They were modeled on a European tradition, a settled society—one which looked backward. Americans kept the

European form, but learned to justify the system with a new patter that sounded good to citizens of this new country. We were told that formal subjects and domination of pupil by teacher were justified because thereby the mind was trained or the character formed. No matter how well the pupil learned to do just as he was told, no matter how remote from life might be the subject matter, the disciplined mind that resulted therefrom was said to be suited to a pioneer society. Even if it were proved that a thorough knowledge of formal grammar did not help one to write or speak English better, such knowledge was still desirable because of its disciplinary values; and if a leader were to be trained, proper education first disciplined him to be a follower. Both these theories are preposterous. Neither finds much justification in educational research. They are the talk of the pedagogue, which finds willing ears among a population down underneath proud of its past, unworried about its future; like Wellington and Bazaine ready to face the world with the tactics of Waterloo. Most of my intelligent friends, good patriotic Americans, down underneath believe in a form of education much like that of ancient China or Egypt. Most of them are quite fearful of anything different. That is why some educators have gained great popularity by the advocacy of the 100 best books, or the return to the standards of the McGuffey Readers as the cure for delinquency. This address will go unnoticed in the newspapers—which is all right with me; but if I were to advocate the return to the McGuffey Readers, or to Plato and Aristotle, these remarks would likely make the wires of the Associated Press. Such is the educational attitude of the Americans. That is why America stands in such grave danger of falling behind the rest of the world.

Here then are the danger signals:

If you see old men or groups of old men get the power, whether it be a legislature or boards of regents or trustees; if the rank and file are left out of policy making; if younger men and women fail to get on the Educational Policies Commission or on curriculum committees—then *watch out!*

If you see rich people having exceptional opportunities for their children; if money buys a better opportunity than ability; if poor children tend to drop out; if school customs and habits and honors go according to social standing; if there are poorer educational opportunities in the country than in the city, in the poorer states than in the wealthier; if college enrollment is greater from the local area than from a distance—then *watch out!*

If children are deprived of a chance—an equal chance—because of color or creed; if quotas are set up for Negroes and Jews; if Indians or Mexicans of good ability are treated differently from other people of similar ability; if the mountain people or the Dust Bowl inhabitants, or the cotton pickers, or field hands, or canal boat people are treated differently—then *watch out!*

If Washington or a Supreme Council on Education or the State University set a fixed curriculum; if the CIO or AFL or National Association of Manufacturers tell us what to teach; if they set before us 100 best books and say that is our educational task; if work in school is justified because it supposedly trains the mind in general; if obsolete subject matter is taught to train the character; if newspaper columnists advocate hard education as a bar to delinquency; if they advocate compulsory military training on any ground other than military necessity—as good discipline, democracy, and the like—then *watch out!*

If parents or critics put on campaigns to bring order into the schools, demand that children be forced to do this or that, bring back the rod, urge memoriter recitations, require examinations on masses of facts, historical or scientific, harp on the fact that "things were not like this when I went to school"—then *watch out!*

All these are signs that America is about to rest on her oars.

We are going into a new world. No doubt about that. Hiroshima gave the *coup de grâce* to the idea that the old world lived on. We are entering just as new a world as did the Pilgrims when they landed on Plymouth Rock; or as did the settlers who pushed up the river here from New Orleans.

What are the new problems we must solve? We *must* find the answer to One World. Otherwise we shall all perish in the next war. We must find the answer to recurring depressions. Otherwise we shall go to pieces inside our country. We must find out how to regulate our lives well enough so that people will have food, clothing, shelter, a measure of security and not lose the liberties our Fathers fought so hard to preserve.

We know these things absolutely. If we go on as in the past, we shall not have One World; we shall have a world of desert waste, with most human beings dead and the rest in caves. If we go on as in the past, we shall have depressions every few years, and probably our democracy will crumble under the weight of them. If we go on as in the past, politics and economics geared to an agrarian age will be quite inadequate for the age of technology. We cannot win by looking to the past. Therefore, education must not look to the past.

But we want to look to the past; that is our trend; that is our desire; that is what we will do if we follow the pattern of previous conquerors.

When the danger signals that I have listed flash—*watch out!* They are red lights that say, *stop!*

Do not lie low when you see reactionary and dangerous practices taking root. Stand for the young getting their chance. Stimulate decisions with as wide popular participation as possible. Advocate in every way possible equal educational chance regardless of birth, race, religion, or class. Let the curriculum look to the future, even if it is solidly based upon the past. Do not be fooled by the professors, college presi-

dents, and scientists who justify what they do by the theory of formal discipline. Children are human beings, sacred personalities, and they deserve to be treated as such.

You and I are in a big battle, the battle of our lives. Somehow or other the United States, triumphant, is doomed to failure unless the trend that has gripped all triumphant nations before us is checked and reversed. "Pride goeth before destruction, and an haughty spirit before a fall." We do not want our country destroyed. We do not want America to fall. Therefore, all of us must give the rest of our lives, not only to prevent traditional, conforming education, but to build schools, colleges, and other means of education to make America flexible, sensitive to change, and adaptive—truly a land of the free.

The Role of Social Science in the American Scene*

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I AM a social scientist, with my major areas of interest in the rural aspects of sociology and economics. I presume that, since the reason for my presence here this evening is related to the work I have done in these areas, it is not inappropriate to discuss the place of my profession, of social science, in our American culture.

Appreciation for, one might also say veneration of, science is one of the cultural traits of our society. We are inordinately proud of the achievements of our laboratories. Few of us understand the theoretical accomplishments of our physical scientists which make their work, on the applied side, possible, but we glory in and use their practical discoveries. From electric razors and neon lights to B-29's and atom bombs the good old U.S.A. is "tops." Why mix a cocktail or squeeze an orange by hand when electric energy can do the job?

But to the man in the street social science is something different. If he is stupid or if he is a reactionary, he will tell you, as the dean of a well-known state university told me last month, that social science and socialism are one and the same thing. Of course nothing could be further from the truth. If, on the other hand, the man in the street is inclined to levity, he will meet an inquiry about the utility of social science with the hoary witticism that if all social scientists were laid end to end they would not reach a conclusion. If you asked him for facts he probably would be hard put to it. The truth of the matter is that from the days of Newton, to those of Pasteur, to those of Darwin, to the recent conflict between Compton and Millikan about the cosmic ray —both of whom were working from many objective observations—physical scientists have engaged in just as heated arguments as have social scientists and have been just as unable for just as long to reach a conclusion.

The more thoughtful man in the street will raise another objection. To him sociology and economics lack precision because they deal with human beings, and therefore with unpredictable behaviors. This situation does not

*The Comenius Day lecture given at Moravian College, Bethlehem, Pennsylvania, March 28, on which occasion Professor Brunner received the 1946 alumni award.

exist in the physical sciences—at least not in the same degree. But the animal husbandry scientist, while he can predict herd reaction in terms of the milk production if the feed is changed in this way or that, cannot predict cow behavior. There are variations in the psychology and tastes of cows and hogs just as there are in the psychology of human beings. Even the physicist cannot tell which railroad rail will crack during a very heavy frost, and the mathematician will admit that the value of pi is but approximately finite.[1]

My thesis on this occasion is that the generalizations of the social scientist, in areas where he has the data to make them, have the same validity as those of the physical scientist; that they have predictive value; and that the failure of society to give them due weight has caused great loss and suffering. I propose to indicate, by a series of specific illustrations, some knowledge that social science has acquired, especially in the past twenty years, and to mention some of the generalizations growing out of this knowledge which have an extremely high degree of validity and of predictive value.

I turn first to economics. Some years ago the United States suffered from its most serious and its longest depression. Just as it was getting under way a law was passed by Congress raising tariffs very substantially. Practically every member of the American Economic Association, of whatever party, signed a letter to President Hoover asking him to veto the bill. They pointed out the harm it would do the domestic economy, the retaliations that would ensue abroad. Their warning was based on the findings of research. But Mr. Hoover signed the bill. The predictions became facts. The decline in our exports was practically the predicted amount. These social scientists, laid end to end, reached a conclusion, a correct one, but the country would not listen. The consequence was increased unemployment and suffering.

Take another illustration. From the days of Adam Smith, Ricardo, and other early economists, ideas concerning the relation of income distribution to economic progress, that is to prosperity, were derived from deductive reasoning. In the past thirty years, hard data of considerable scope and amount have become available. Much knowledge of predictive value is in our possession which would be of real use if applied to the disturbances in the area of labor relations, for instance, but of which many labor organizers and business executives are grossly ignorant, to the detriment of the general welfare. Using research mechanisms familiar to us (some of which were developed here) and building policies upon their results, countries as far apart as Sweden and Australia have to their credit a series of socio-economic achievements that make the United States look like a backward nation. These include overcoming the depression in less than half the time it took us; an amazing reduction in strikes without resort to government operation of industries; and

[1] These last two illustrations appear in a valuable article by Chester Alexander, "Is Sociology an Exact Science?", in the *American Sociological Review*, Vol. XI, No. 1, which the present author read after preparing this talk.

maintaining, in the past three years, as has Canada also, a stable price level. Indeed, since V–J Day both the price and the wage levels in Canada have declined slightly.

If time permitted, it would be interesting to describe in detail what happened. Instead I must content myself with a single documentation of the main point. In almost any text in economics published before 1930, you will be told that the consumer demand of the people and the formation of new productive capital are unrelated; that business will increase the supply of capital goods through savings even though consumer demand declines. In fact and on the record we now know that the expansion of new plant capacity and of equipment—that is, of capital—is closely correlated to the expanding demand for consumer goods. In other words, we know that savings are most rapid when the purchasing power of people is high. Anyone who observed America during the depression of the 1930's and during the recent war prosperity should not need the studies of the Brookings Institution which establish this fact. Unfortunately, much current discussion, such as that in Congress and in the press over the so-called full employment bill, again showed an appalling lack of knowledge of the facts of economic life in an industrial society. The businessman too often sees only his end of the process; the labor union officer only his. But the totality of society is broader than labor and business. We need both approaches, and still others.

Similar illustrations could be given in a number of other important areas of our economics. The fact, demonstrated by another Brookings study, that business or labor or both can price themselves out of a market, that is, can raise the cost of a product to the point where buyers strike, is being completely ignored by both parties to most of our current labor difficulties. Despite the real possibility that inflation can destroy the great backlog of savings on which we count to give us years of prosperity, by undermining the purchasing power of such savings, many organized groups are pursuing policies, either out of fear or stupidity or in the hope that they can profit before the deluge, that make this calamity more imminent.

In Australia, shortly before the war, I had what would be a humiliating experience for any American. My official duties brought me in contact with the presidents and the directors of research of all of Australia's six banks and with some of its leading economists and industrialists. Without exception they said, in effect (a direct quotation from one such): "You use science in applied technology so wonderfully and so intelligently. How then does it come about that the United States is a nation of economic illiterates?"

Not long ago the great Swedish sociologist and economist Myrdal, now prime minister of his country, returned home after several years in the United States. In a remarkable address before the Royal Economics Society he reported upon our economy and its prospects. Closely reasoned, replete with data, his conclusion is that the

United States will have to go through another depression, worse than that of the 1930's, before we come to our economic senses. His fear, shared around the world, is that such catastrophic folly would drag the whole world down to economic ruin because of our enormous power and resources.

All this is not to say that the social sciences have no place in the American scene. Before coming to that point, however, it is necessary to consider two more of the social sciences.

In sociology, also, considerable amounts of data have been assembled. For instance, one thing sociologists know a good deal about is the behavior of institutions or, if you prefer, social organizations or agencies. It is of the nature of institutions that they live both for their purposes and for their growth in power. This second aim is rarely made explicit. It is rationalized in terms of the first. The result of this is that health or recreation leaders, churchmen or schoolmen can make a case for their interest or institution that is convincing to their professional colleagues, who think in institutional terms, but that is too frequently unconvincing to the layman. It is no accident that some of the strongest local and even state institutions have been built by persons with sociological understanding of this point.

Again, much of the success or the failure of community organization for war purposes was determined to a considerable degree by forces and trends at work for many years. The sociologist knows that the social forces operating in a community have all had a past; that no community can be understood, let alone organized for any purpose whatsoever, unless the proposals are related to that past, unless they appear to fit into the on-going social processes of the community. It is a sociological axiom that no two communities are exactly alike. It applies to racial origins, local traditions and mores, structure and composition of the population—to both quantitative and qualitative phenomena. Hence the sociologist can and does guide community organization successfully in situations as diverse as Gordon Brown's in Samoa, Alinsky with his People's Organizations in Chicago, or many rural sociologists in rural communities.

An even clearer illustration is our present housing shortage. When the 1930 census data became available, showing that by the end of the decade the United States would have the largest youth population in its history, it was a simple matter to forecast a peak demand for housing in the first half of the present decade. The war deferred that demand by a year or so, but the prediction has come true. When it was made, the suggestion was also made that a housing program would help increase employment and was self-liquidating. A half-hearted, no a tenth-hearted, effort was made in that direction. For the most part there was a chorus of condemnation. Our real estate people would not risk their capital. Didn't these idealistic, impractical professors know there was a depression? Nor did those concerned want any federal aid. That was to invite federal control, to become involved in

bureaucracy, to go communistic. So the number of housing units erected annually in this country dropped from the more than a half million record in several years in the 1920's, to well under one hundred thousand in two of the years in the 1930's, and at no time in that decade equaled the quarter million built in 1912. Many of these few were built because, usually after bitter battles, local housing authorities were approved. But for this government aid, our present situation would be worse than it is. Interestingly enough, in the locations studied, for both houses and schools the cost per room of government aided or constructed housing has been 10 per cent less than that of other comparable structures. On the basis of reliable data sociologists made a prediction. It was ignored, but it was accurate. We are paying the penalty today—and shall continue to pay it for five more years at least—for our refusal to look housing facts in the face.

While I am on this subject, let me add one more word. We have had a phenomenal increase in the birth rate in recent years, following the decline from 1925 to 1936. It is likely to continue high, though not at the peak, for two more years. In 1957 we will have the highest elementary school enrollment in the history of the nation. In 1960 or 1961 high school enrollment will reach a new peak, and soon afterward there will be a new top-level demand for housing. Nothing but an atomic and germ war can prevent this from happening. We have less than twenty years to catch up on our present huge housing deficiency, to rebuild or modernize our millions of obsolete or dilapidated houses, and to get ready for the new demand. A sane program by the construction and financing interests, with or without federal and/or state assistance, is called for. One item in that program should be the securing of maximum profit, not by charging all the traffic will bear per house, but by the techniques of the mass distribution industries; namely, maximum production at lower per unit costs, the profits to accrue from the large number of units produced. In the light of this situation, judge for yourself the present attitude of Congress toward Mr. Wyatt's proposals. The facts are clear. Will we have a second demonstration within one generation, in housing, of too little and too late?

The sociologist has demonstrated again and again, moreover, that slums cost society more than they are worth. Again and again the above average crime, fire, morbidity, and mortality rates, and retardation in the public schools, in poor housing areas, have been found to cost the taxpayer more than the tax collector received. Comparably, the rural sociologist can document the fact that poor land makes poor people. There are a considerable number of poor-soil counties in the United States where state and federal aid during the depression amounted annually to more than the value of the agricultural production. Under the misused banner of free enterprise, in both these situations, the relatively few have been permitted to profit at the expense of the rest of us—at the ex-

pense of suffering and the loss of human capacities of the people concerned. The social scientists have shown that our practices are faulty, have suggested remedial measures, and have been ignored by a society whose intelligence does not seem to get beyond the gadget level. Losses of this sort are not taken out of pay checks like income taxes or union dues. They are losses, nonetheless, and heavy ones.

One remedial measure would be federal aid to education in proportion to need, a principle that most democracies, Russia, and Germany have adopted. The disadvantaged, largely rural third of the states spend a higher proportion of their wealth for education than do the richer states, but even so they have such meager resources that they buy a far poorer quality of education. They have proportionately up to twice as many children to educate as the richer states. Half of this surplus emigrate to the cities. They are unable, as a rule, to meet the demands of life in industrialized, urban areas, and their maladjustment costs urban taxpayers plenty. Cities guard the source of their milk and water supplies very carefully, as they should. They have accepted what physical science has to say in such matters, but they are extremely careless about the source of their human supply. Instead of doing anything to improve the quality of that, they complain about the high cost of taxes, due in part to neglect of the fundamental American democratic principle of equality of opportunity applied to education.

As a matter of fact, both sociology and economics *know* that capital spent on human beings earns its return in dollars-and-cents terms just as much as capital spent on a new steel mill.

The proofs of this are manifold but would take me too far afield. Let me just illustrate one area of data on this point. Yugoslavia has fairly good soil, fair natural resources, and very low per-capita income. Norway has poor soil, a very short growing season, and few resources, but in peace times a high income. But Norway also has an unusually high level of education. Rumania has fertile land, forests, oil, a good climate, and poverty. Switzerland has very poor soil, very limited agricultural land, a severe climate, few minerals, and a very high per-capita income. Switzerland also has one of the best educational systems in the world and one of the most highly trained industrial populations. Norway and Switzerland have invested capital in their human resources largely because they had no other. The dividends have been enormous. Now apply this to our own South—originally rich in soil and forests, which, though seriously wasted, are still good; and very rich also in natural resources—but nonetheless the poorest section of our nation. It has not invested in its people. When it does or when the nation does, it will become our Number 1 area of opportunity.[2]

[2] The above paragraph is based on a very considerable amount of socio-economic research. Especially valuable is the work of Professor Harold Clark, summarized in his "How to Make Every Nation Rich," in *Teachers College Record*, March, 1945, from which the above illustrations are drawn. See also *Education and Economic Well-Being*, Educational Policies Commission, Washington, D. C., 1940.

Once again social science has reached a validated conclusion. But society has not acted. The social costs are huge, as, among other evidences, the draft rejections revealed.

Finally, in this category, out of hundreds of studies of the structure of the rural community, the rural sociologist can, for instance, after a survey, tell within a small margin of error the needed population, the necessary economic base, and other factors requisite for a consolidated high school. This, of course, has very practical applications. If a consolidated school district is laid out on an inadequate basis, there is a serious waste of capital funds. If it is too large, transportation costs eat up too large a share of the current expense budget. What applies to the school applies to other social institutions also, including business and churches. East of the Rockies, the rural churches of America have been built up largely in terms of the horse-and-buggy community. Today we have the automobile and the hard-surfaced road. The proportion of members in village churches coming from the agricultural hinterland has more than doubled in the past twenty-five years. It now stands at over 40 per cent. It is usually the more advantaged farmers who leave the open-country church for the one in the village or town. This weakens the former and is in large part responsible for the high mortality of open-country churches, which averages over 3 per cent a year. New churches fail by a considerable margin to make good the loss. The result is that, contrary to popular opinion, the proportion of population in churches in the open country is lower than in the villages, towns, and cities of America. Theoretically we know enough to lay out rural church parishes so as to overcome this situation and do away with intra-denominational competition, give better religious service to the farm population, and enlist a larger proportion of the population in the church. To date only the Roman Catholics have adopted these procedures.

With respect to psychology and social psychology, also, great strides have been made. The average educated person knows something about the diagnostic value of various tests in this field. It is possible to predict with a high degree of accuracy whether a given adolescent is a good or a doubtful college risk. The rating devices applied in the selection of officers for foreign service for the OSS in the war were a remarkable extension of these techniques and are already being popularized and used by business personnel officials, although they are by no means as perfect as they will become. The similar construction of tests that separated bombardiers from fighter pilots, from bomber pilots, and so on resulted in an amazing reduction in the number of failures among men already selected and in the air corps.

But psychology has other, perhaps more substantial and socially significant, achievements to its credit. My colleague Edward L. Thorndike's work, extended by Irving Lorge, has disproved the adage that you can't teach an old dog new tricks—at least as applied to human beings. These men

have measured the loss in speed of learning with advancing years and found it real but relatively slight. By the same token, they have learned a lot about how to teach adults. In a world of rapidly changing technology when a whole skill may be supplanted by a new invention, just as setting type by hand was made largely unnecessary by the linotype machine, a finding of this sort is of great importance in terms of the retraining of adult workers whose skills lose their market value. The implication for personnel policy is clear.

Another great contribution of psychology, also largely by Thorndike, relates to the demonstration that rewards are effective in securing desirable action while punishments are not. Applied originally in the field of education, this demonstrated theory has far wider applications, including labor relations. Time does not permit even describing the findings adequately, let alone their application; but I do wish to speak of an industry in which these findings and others, some of which I shall mention later, have been successfully used. I refer to the ladies' garment trade. Here, for over thirty years there have been incentives for workers, arbitration of disputes, and growing union–industry cooperation. The cost of the arbitration machinery is borne jointly by the employers and the union. The union even has an industrial engineering department that will help the small employer become more efficient, in the true meaning of that term. Of course, it also safeguards employee interests in terms of agreed-upon working conditions. If the employer doubts the wisdom of using this resource, *the union* offers to pay for an outside, impartial study of his plant. The assumption is that what is good for the industry is good for both employers and employees. The union has an elaborate educational and social program for its members. The research department of the union is concerned with economic and social problems, especially in relation to wages and prices. Of course, benefits are shared by both sides and, both would claim, by the consumer as well. I am not saying that the plan is perfect, that there are not frictions and now and then disputes. But outlaw work stoppages and lockouts are all but unknown, the former being prohibited by the union and both by contract.[3] Strikes are obviously rare. Social science has been successfully applied.

Based partly on these discoveries of Thorndike and largely on studies in social psychology, are a whole group of findings which apply to the present difficulties in employer–employee relations. In the first place, why do workers join unions? If this were a class, there would already have been a chorus reply, "To get higher wages." Well, guess again. That's only one part of

[3] *The ILGWU Management Engineering Department.* Educational Department, ILGWU, New York, 1943.

Meet the ILGWU. International Ladies' Garment Workers' Union, New York, 1946.

William Gomberg, "The Relationship between the Unions and Engineers," *Mechanical Engineering*, June, 1943. *See also* other articles by Gomberg in *Industrial Engineer*, March, 1944; and the *Bent of Tau Beta Pi*, December, 1943.

Mark Starr, *Training for Union Service.* Educational Department, International Ladies' Garment Workers' Union, New York, 1940.

the answer, about one-third of it, to be exact. They join also for psychological reasons, for self-expression, to secure creative outlets. They join for social reasons. They want social group relationships with their fellows. They want to share in community activities through their own organization, controlled and operated by them, not one handed down by even the best of paternalistic employers.

There is considerable concern, especially in the automobile industry, over reduced production per man-hour of work. As a matter of fact, over-all industrial productivity per man in 1944 was more than half again as much as in 1929. Where reduction occurred it was partly the result of the replacement of skilled personnel in the armed services by inexperienced, weaker, and temporary employees, but that is only a small part of the story as is feather bedding. Psychologists have conducted a number of definitive experiments in which conditions of work with respect to hours of labor, lighting conditions, mid-morning and mid-afternoon rest periods, with or without a light lunch, and so on were perodically changed. Regardless of what was done, production either increased or remained at the high levels attained. In one case, the unit experimented with had previously been rated as the most efficient in a big steel mill. But they increased production 110 per cent.

The explanation was twofold. First, the employing corporation guaranteed that there would be no reduction in personnel, or, where it applied, in piecework rates. Second, and more important, the employees were participating in planning with respect to the conduct of their jobs. Again, given these conditions, it is possible to predict results—which is *the* criterion of science.[4]

This catalogue of some of the scientific knowledge social science has acquired and the indications of its predictive value has been very inadequate in terms of the total field. More important, it has perforce omitted a considerable number of research areas in which we know that a relatively small expenditure of money would produce final answers in terms of our present society. As a single instance, it would not cost very much to determine what a given community could afford in terms of its capital expenditures for a new school, a library building, a community center. Defaults on school district or municipal bonds are not unknown. Far more numerous are the places that overextended themselves to the detriment of their taxpayers and of their further progress. A guiding formula would be very much worth while.

Why has America been so slow to use these and other assured results of social science? One reason relates to the small amount of money available for research in this general area of human knowledge, as compared with the millions spent by industries and foundations in the physical sciences. This difference applies also to govern-

[4] *See* especially C. S. Golden and H. J. Ruttenberg, *The Dynamics of Industrial Democracy*, New York, Harper and Brothers, 1942; or, for a summary of this and other studies, Thomas Carskadon, *Workers and Bosses Are Human*, New York, Public Affairs Committee, 1943.

ment even in peacetime. It is trite but true to say that if social science had been given early enough the four billion dollars that have been spent on the atomic bomb and on chemical and germ warfare—say half for research and half for popular education—perhaps then the first release of atomic energy would have been for constructive, not destructive, purposes. This remark is not only true and trite, as I said, but also futile, if for no other reason than that all the social sciences together could not wisely have spent such a sum in a few years. They would not have had enough trained personnel to put into a gigantic venture of that sort. They have been too long on a starvation diet.

But there are deeper reasons. Except for theoretical work, the problems the physical scientist solves have an immediate application with respect to very definite things. A new machine is invented, an old one is retooled, and a new product is born. A new combination of chemicals is made, and a better soap appears on the market—or one the advertisements *say* is better. Some institution stands ready to utilize and publicize any practical discovery of the applied physical scientist. No such institutional arrangements exist in the social science field. We are, thank God, a democracy, an imperfect one but nonetheless enjoying a considerable measure of the freedom which exists to some degree in all societies that have embraced democratic ideals. In this connection, that means that the *facts* the social scientist discovers appear to the man in the street only as ideas which must compete in the market place of public opinion for acceptance.

As already shown, many of these facts contradict the preconceived ideas of the people to whom they apply. They seem to run counter to vested interests. This arouses fear and inhibits honest thinking. This fear comes also because, in large measure, research in the social sciences grows out of problems of which society has but recently become conscious. It is therefore applied to areas of concern in which differences of opinion, and often conflict, already exist. It takes a while for the cool light of reason to dispel the unilluminating heat of controversy. Furthermore, research, even in the physical sciences, lags behind need. Therefore, for many of our social problems there is no answer at the exact moment we want one. There is a certain medicinal product sometimes called 606. That number signifies that the attempt to find the cure for one disease failed 605 times. The public has long since forgotten those 605 failures. But if a public policy, proposed by social scientists because of the need for such a policy and before all the data are in, fails just once, the conclusion is that social science is not science. The remedy, one may well say, lies in education. In part it does, but examine the relative place in the total curriculum in school and college devoted to the social sciences and the proportion of student hours of time they enlist. The tragic result can be illustrated in a thousand ways, most recently by the questions some sena-

tors have asked treasury experts explaining the proposed loan to Britain—questions which, alas, betray a complete ignorance of the most elementary facts of economics. Being of society, we take it for granted, as city people do their food. From the point of view of our welfare, individual and national, nothing could be more dangerous.

I have already hinted at another reason why the findings of social science are not adequately used or even recognized. The institutional arrangements are largely lacking, unless we use government. At the mention of that word, cold shivers run up and down many backs. Yet clearly a half-destroyed world can find no other instrumentality adequate to the job of rebuilding itself. In our own land, as *Fortune* magazine has often stated, big business inevitably means big government.

I hold no brief for some types of government control. They are completely foreign to our culture and our ideals, so much so that the mouthings of an economic fossil like Hayek capture the imagination of the American business public, even though he would end all government aid to business, such as the tariff and ship subsidies. That part of *The Road to Serfdom* most people never read, and the *Reader's Digest*, of course, left it out of its summary. One of America's conservative economists calls the book an "unbelievable . . . full throwback to atomistic competition."[5] In contrast to this either ignorant or insulting Teutonic misinterpretation of British and American culture, I wish to give a single illustration of how government may be used effectively in harmony with our traditions—the Agricultural Adjustment Act. Because of politics, few laws have suffered from such a barrage of false propaganda. It was a measure designed to help farmers adjust production of given crops according to market conditions, down or up. But, unlike the practices of business, if any farmer agreed to cooperate, when he cut down production of one crop to meet sales forecasts, he put those acres into other, more desperately needed crops. The law was flexible enough to apply to a depression such as we had in the 1930's, or a period such as that of the war, when, in the face of stupendous odds, our farmers broke all food production records by wide margins.

That, however, is beside the point, as is your opinion of the law. The important thing is its operation. It offered a mechanism by which farmers could cooperate. Each crop plan was worked out with representatives of the farmers concerned. Even then no plan was adopted until it had been approved by large majorities of the producers concerned. No farmer was forced to cooperate. He could stay outside the plan if he wished. No huge bureaucracy was set up to administer the law. Instead, the farmers of each township and county elected a few of their neighbors to committees. Many committees I know had a majority of members be-

[5] E. G. Nourse, in *Journal of Farm Economics*, May, 1945, pp. 484-488.

longing to the Republican party. Even the state committee of five was composed of farmers. No salary was paid these committeemen except on the state level. They received expenses, plus a per diem roughly equal to the cost of employing someone to do their work on days when the committeeman had to be away from his farm for the AAA. Moreover, these local committees, from their experience and problems in the operation of the Act, made suggestions for improvement to state offices and to Washington which were acted upon. Said one farmer to me, "Regimentation? 'Tarnation! We worked this thing out. We voted for it. We operate it. If the need comes, we'll change it or end it." I submit that this is democracy in action; that it is an authentic expression of the American spirit and culture; and, most important, that it shows a way in which, if we so decide, we can use government democratically to assist us in carrying out policies based on the assured facts of social science.

I could give you other illustrations. I could also give you illustrations of mistakes and failures by government. But let us remember this. The mistakes of government are and should be public property. The mistakes of business and all private institutions are private, but they occur just the same. They become evident to the public only through failure, bankruptcy, or perhaps suicide.

My claim, please note, is not that social science has all the answers, or that government is the only institution that can apply its findings. That would be ridiculous. I have already pointed out the severe limitations under which we have thus far compelled social scientists to work, and have only illustrated some applications of its findings. I do claim, and hope I have proved to you, that social science, despite its handicaps, has far more to contribute to the solution of a number of our pressing problems than is commonly recognized or used, and that given more support it can contribute still more.

We have no greater need at the moment than putting the facts and plans of social science in the hands of the people. That means adult education. It also means a realistic approach to the social sciences in schools and colleges. It means building confidence among our people in the possibilities of the social sciences to improve their lot in the social processes and conditions of our collective life, as the physical sciences have improved their health, comfort, and conditions of living. It means adequate support for, and freedom of, research. It means patience with, objectivity toward, and constructive criticism of, the results of that research. This objectivity must become part of our accepted behavior in terms of our attitudes, actions, and relationships. We must become willing to meet new social facts and adapt our behavior to them; in short, when necessary, to change our lives, just as most of us have probably already decided to use some of our wall space in the living room for television projec-

tion unless a screen is built into the instrument we hope to buy.

Moreover, it is extremely doubtful that we can make more effective use of advances in the physical sciences without greatly strengthening the social sciences. Tardily, indeed, some of the atom scientists are becoming conscious of this fact. The level of one is dependent upon the level the other reaches.

America is one of the world's democracies. Never has our way of life seemed so precious or so threatened as in the past few years. We have recently seen one of the world's great nations, a people whose blood flows in the veins of millions of loyal Americans and whose constitution of 1919 was a democratic instrument, changed in six years into a brutal aggressor that plunged three-quarters of the world into war and the whole world into fear. How was it done? That story too is clear. Every medium of education and propaganda was unleashed and used toward the single end of enabling Germany to dominate a prostrate world.

We in America have no zest for that type of domination, but our democracy is still being challenged from without and from a few groups within our boundaries. We have unlocked the secret of energy untold in the atom. We have the possibilities of a standard of life for all our people undreamed of until recently. But it will not come unless we devise the social arrangements to distribute these gains. We cannot, as some are now doing, in almost the same breath claim that free enterprise will bring the millennium and foretell a depression in a relatively few years. Free enterprise itself needs a social structure and organization in which it can function to capacity; and on the record some who speak for it show too little knowledge of many of the factors that have helped America achieve what she has.

The America of our dreams will be built, if it is, by Americans; by the inventions of physical scientists; by the producers with the know-how to turn inventions into goods; by farmer producers who, with the aid of agricultural science, will help answer the world's prayer for daily bread; by other scientists, who will conquer disease and bring healing; and by social scientists, who will study human behavior and reveal its meaning to human beings and play their part in building the requisite institutions of the future on the sound foundations of knowledge. This is the role of the social scientist in our society. At long last he knows the truth of what the prophets declared—that "man lives not by bread alone." Each group must play its part in making America truly great. Without any one we will fall short and perhaps fail entirely.

Like Germany of 1933, we have schools, we have adult education, we have a literate people, we have press and radio. We know something about how to influence people and mold opinion. We can take the great principles of our land stated in the Declaration, the Constitution, the Bill of Rights, not as words to be memorized but as ideas to be practiced. We can

find out their meanings for our industrialized society and teach our people those meanings and how to achieve them. We can turn away from chaos and destruction and toward what a few years ago would have seemed utopia.

We lack chiefly in this effort what social science must contribute. But social science has shown enough to warrant freeing it, supporting it as never before, and using its findings from grade school to graduate school and in every adult group. Social science alone will not remake America or the world, but America and the world will not be remade without it. I do not know whether we will do this. I do know that we need desperately to do so. And the time to begin is now.

Goals for Educational Leadership*

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IT HAS become a truism that we live in an age of rapid and profound change. The growth of freedom of thought, the use of the scientific method, the advance of the industrial revolution, the rise of political and economic democracy, and the ever-widening applications of technology—culminating in the atomic age—are recasting the thoughts and actions of men into strange new patterns.

Communism and fascism challenge democracy for world leadership. Isolationism and nationalism retreat before the conception of "one world." Opposing racial theories struggle for supremacy in both domestic and international affairs. Total and global warfare give way to atomic warfare. Mankind confronts a choice between the abolition of war or annihilation. Modern man is, indeed, obsolete!

In such periods social institutions either wax or wane. Like civilizations they do not stand still. They either adapt to new demands or they cease to exist.

In looking forward in American education, we may well take inspiration from our forebears in this field. Their creation of the free, common, nonsectarian public school was a social achievement which future historians will rank high in the accomplishments of the past century.

We who work in education today may well ask ourselves: Are there victories for democratic education to be won between 1946 and 2046 which are comparable in importance to those achieved in the preceding century? Undoubtedly the answer to this question is "Yes." Let us identify some of them.

First, we must extend the scope of our educational system to make it adequate to the needs of this century. We have not yet provided a range of educational facilities appropriate to the needs of Americans of all ages.

The facilities available at the kindergarten and pre-kindergarten level are inadequate in the typical American school system today. Less than one in four of our five-year-olds now attends kindergarten. Only one in sixty three- or four-year-olds is in a nursery school.

The great importance of the early years of childhood as revealed by psychological research, and the significant educational results which good schools can achieve at this level, urge the necessity of providing adequate nursery

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school-kindergarten education. One of the first goals of leadership in the decades just ahead should be the provision of adequate school services for young children.

The growth of junior colleges and technical institutes at the thirteenth- and fourteenth-grade level is the result of insistent needs in our society. These institutions, in conjunction with the upper years of high school, should provide for effective vocational and semi-professional education and for the extension of general education. They should be primarily terminal institutions rather than mere preparatory schools. Education at this level should be made available to the rank and file of American youth. Here is another major goal for educational leadership in the decades just ahead.

One of the notable shortcomings of American school systems today is the meager provision of adult educational facilities. The need for action in this field is great. The accelerated tempo of change which makes childhood schooling obsolete much faster than in previous times, the enormous increase in governmental activity calling for more and better action by citizens in general, the catapulting of the United States into the forefront of world leadership in an atomic age, the difficulty of individual and family adjustment in an age in which crises are the rule rather than the exception, the rapidly increasing amount of leisure—all call insistently for a program of adult education keyed to the needs of the day.

We should develop an adult education program involving everything from literacy and vocational training and retraining to general education concerned with leisure activities, the needs of individual and family life, and the difficult problems of national and world affairs. This would involve employment of the kinds of teachers and methods which are not dependent upon compulsory education laws for a clientele. Such a program could reclaim a portion of the American mind from the slavery of commercial amusement.

A second major goal for educational leadership in the years ahead should be the removal of the obstacles which prevent millions of Americans from taking advantage of educational facilities now in existence. Complete educational coverage of the whole population should be the objective.

The 1940 Federal Census listed nearly three million adults who had never attended any school. An additional seven million reported so little schooling that we know they are virtually illiterates. Nearly two million children six to fifteen years old were reported not in school—ages during which, by common agreement, all should be in school.

Of the seventeen million young men examined under the draft, some five million were rejected—nearly one in three. In those states which make least adequate provision for education more than half of the men examined were rejected. The high rate of rejections was pronounced a matter of national concern by Selective Service. It is a national disgrace that General Hershey should have had to say in one of his

reports at a critical period in World War II, ". . . it is regrettable that we lose so many physically qualified who must be rejected because of illiteracy."

At the top of the educational ladder we find another example of denial of educational opportunity. The most regrettable educational casualties in the United States are among our talented youth. Numerous careful studies made in all sections of the country reveal that approximately half of our most capable youth, according to intelligence tests, school marks, and other measures of capacity and diligence, find it impossible to finish high school or to go on to college. Our educational system is about 50 per cent efficient in developing our most valuable resource —youth of superior ability.

In the years ahead education should be made effectively free at all age levels. Every American youth with ability and willingness to study should be guaranteed a chance to realize the best that is in him. This would involve free tuition or scholarships at all levels, and provision of living costs of students in the upper years of high school and in college, in so far as may be necessary to keep every youth in school or college as long as he should be there.

Such a program need not weaken individual initiative; in fact, all youths who enjoy such privileges should, in addition to their school tasks, do some work which is clearly of social or economic value as part payment for their education.

This is essentially what we did during the recent war period when we were really serious about using all our resources. All youths came under selective service. All those who were accepted were given basic training for warfare. Those of superior ability and industry were given advanced training and education. All living costs during the training period were met from public funds. In addition, each youth received a small wage which began on the day of induction. Extra compensation was available to help in meeting family responsibilities.

It would have been utterly stupid to let family economic status determine how well a youth should be trained for warfare. We have not yet recognized that it is equally stupid to let economic barriers determine how well a youth will be prepared for peacetime service.

Equal opportunity, including free access to education for all, has been one of the guiding tenets of American life. The facts reveal, however, that the principle of equal opportunity is violated at every level of our educational system. One of the priorities for educational leadership in the years ahead is the correction of this indefensible situation.

A third major goal for educational leadership in the decades just ahead is the substantial improvement of the facilities of American public education. By facilities I mean teachers, school plant, instructional aids; in other words, all the provisions for personnel and materiel essential for the conduct of first-rate schools.

This presupposes an acceptable minimum of financial support for every classroom unit in the United States.

We have no such minimum today.

In 1939-40 some five million children, nearly one in four of those in attendance, were in school systems spending less than $1,000 a year per classroom unit.[1] More than one million children were in $500 classrooms or worse. Children in such poverty-stricken school systems seldom get a decent educational opportunity.

It is about time for somebody to stick a pin into the colossal myth that education is generously supported in this country. The fact is that the United States is one of the few important nations of the world that still supports education at the level of semi-skilled labor, rather than as a calling requiring professional preparation. We spend many billions more for non-essentials than we do for the schooling of our children and youth. We allow millions of talented youth to leave school too early because they cannot afford to remain. We tolerate vast educational slums in which the school facilities would be a disgrace to a third-rate nation.

Twenty per cent of the teachers in the United States now hold an emergency certificate, which is the euphemistic term for a certificate to teach granted to an unqualified teacher. The present alarming shortage of teachers at all levels is due to several factors, one of the most important being that teachers' salaries lagged far behind other incomes during the war period. Their power to obtain and hold good teachers has declined sharply since 1940.

Accordingly, a first priority in the years ahead is to restore the absolute and relative purchasing power of salaries to the place where teachers as good as those of 1940 can be obtained. We should then resolutely push ahead toward a professional wage for every one of the million teachers in the country.

The pittances traditionally doled out to American schools for instructional materials such as textbooks, libraries, and auditory and visual aids contrast sharply with the generous provision wisely made in connection with the recent training program in the military services. It is uneconomic, if not stupid, in an age when technology has made remarkable teaching devices available, to give a teacher only the instructional materials used in the nineteenth century. If we followed such a policy in other fields—warfare, business, agriculture, or medicine—we would soon become a second-rate nation.

School buildings represent another shortage. There has been little schoolhouse construction for fifteen years, except hasty construction in war-industry communities. As we enter a new period of school building we should take advantage of the remarkable recent advances in lighting, heating, ventilating, and the development of new construction materials. Flexibility of plant should be achieved along with a sufficient degree of permanence to keep down costs of operation and maintenance. Each school site, and the

[1] John K. Norton and Eugene S. Lawler, *An Inventory of Public School Expenditures in the United States*. 2 vols. (mimeographed). Washington, D. C.: American Council on Education, 1944.

buildings placed upon it, should be planned as a community center, ministering to the educational, cultural, and recreational needs of contemporary life at all ages.

A fourth area which educational leadership should vigorously deal with in the decades just ahead concerns the character and quality of our educational program. A first-rate education for those who attend our institutions of public education is, after all, the great objective. All else is merely a means to this end.

What are some of the major changes in emphasis and direction which should characterize the educational program of coming decades?

To begin with, we should complete the liberation of education from the discredited doctrine of faculty psychology. Forty years of research have disproved the myth that the mind learns like a muscle. According to this faulty conception, various sections of the brain allegedly were strengthened by mental calisthenics, much as a gymnast strengthens the various muscles of his body. Therefore, any content was good for the mind so long as it was hard and heavy. Thus a defense was established for the retention of obsolete subject matter in the school program. Teachers were also mercifully spared the pain of changing their ways.

The trained mind is not one which has been forced through a series of distasteful mental gymnastics. This medieval doctrine has already driven tens of millions of children and youth prematurely from our public schools. It is responsible for the fact that many adults today look back upon the schoolhouse as a place of boredom, if not of failure. The present-day curriculum should find its content primarily in current needs.

The educated mind today is one which has some preparation for dealing with the changing problems of individual and family life, some conception of the contemporary forces which are shaping the thoughts and action of men, some understanding of the alternatives from which we must choose in meeting strange new problems of politics and economics, great faith in the unfettered human mind as a guide to healthy social evolution, and, above all else, ethical standards which reflect themselves in terms of ethical action.

This does not mean that modern education should not take account of the lessons which may be drawn from the social heritage. To recognize the fact that one hundred so-called great books have something to contribute to modern education is easy. To say that their mastery *is* modern education is quite another matter. Such a policy would put public education into the museums alongside the mammoth and the dodo.

The modern curriculum should be founded in the needs of and problems of modern life. It should draw upon the heritage of the past only so far as this material clearly contributes to the good life of today.

Another clearly needed change in modern education involves the replacement of a false and undemocratic idea

of what discipline is, by one which is consistent with the American way of life. Discipline in non-democratic societies means habitual and uncritical obedience to one's masters, conformity to official ways of thinking and acting, and heel-clicking obeisance to a Führer and his henchmen. It should be crystal clear today where this type of discipline leads. It made Italy, Germany, and Japan menaces to world safety. It will do the same to any nation which succumbs to its evil influence.

All democracies, and ours especially, need discipline. Discipline must exist in every school if it is to be an instrument of democracy. What is democratic discipline? It is the habit of judging people by what they are rather than according to prejudices associated with the group they belong to. It is an attitude which makes citizens the masters rather than the victims of government and social institutions. It involves a *very* large element of self-control, and a feeling of responsibility which operates when the policeman, the teacher, or other outer controls are absent. It is the kind of education which makes an honest "why?" rather than a servile "Heil!" the mark of good citizenship.

Such discipline is more difficult to achieve than that of the totalitarian state, but it is discipline nonetheless, and the kind of discipline which a democracy, and a school for democracy, should be principally concerned with.

There are, to be sure, automatic elements of discipline even in a democracy. One should not have to think through whether he is to respond to each red light encountered in traffic. But these are the superficialities, rather than the fundamentals of life in a democracy.

Again, the school of the future should fully reject the cruel and unsound doctrine that chronic failure by children and youth is desirable education. Psychological research has taught us that few things add more to the growth of healthy personality than justly earned success and achievement.

In too many schoolrooms, even today, opportunity for accomplishment is largely confined to the area of abstract thinking. Those who are good at verbalization achieve success, and sometimes with too little effort. Others gain such recognition as they get from outside the classroom, or through misbehavior in the classroom, or after they leave school.

A primary purpose of school organization should be to offer a range of educational opportunities which will permit every child and youth to achieve enough success to justify respect for himself and to gain respect from others.

Thus far in this discussion we have considered the school system of the future from the viewpoints of needed extensions in scope, better diffusion of educational opportunity, improvement of personnel and materiel, and modernization of program or curriculum.

Many of you have doubtless been asking: Can we afford such a program? Where are we going to get the money?

Several estimates have recently been made of what it would cost the nation

to provide genuine access for all to the kind of educational opportunities which have been described. Both the National Resources Planning Board and the National Education Association have estimated that it would cost approximately six billion dollars annually. This is approximately twice the prewar cost of public elementary, secondary, and higher education.

Assuming that the national income should stabilize at about one hundred and thirty billion dollars a year after reconversion, which is a reasonable expectation, six billion dollars for education would be 4.6 per cent of national income, as compared with 3.5 per cent expended in 1940.

Is an increase in the ratio of educational expenditures to national income feasible in an economy such as ours? An increase of this type may be not only possible, but also desirable. It appears likely that the maintenance of a high level of employment and national income will require substantial increases in the proportion of workers and capital employed in service occupations and social welfare services, as opposed to those concerned with the production and distribution of tangible goods. Harold D. Smith, Director of the Budget, in a recent book dealing with the problem of maintaining a high level of income and employment after the war, writes as follows:

> . . . Complementary to a greater production of things must be an expansion in services to the people. Our medical centers and hospitals, our schools, our churches, our youth organizations, our social centers, and our recreation programs illustrate some areas where expansion of services can better our standard of living and promote full employment.[2]

There are, of course, a number of powerful and unpredictable factors in this whole situation. If the economy should slip back into the stagnation of the 1930's, our whole standard of living, including our standard of educating, would retrogress rather than improve. Also, if we let inflation get away from us it would retard private and public enterprise for an indefinite period.

But is it too much to expect that the American people will be able to work out of the morass of reconversion onto the high land where we will make reasonable use of our unequaled resources?

There is also the question of whether the Federal Government will adopt the fiscal policies which are requisite to the adequate financing of education. During the period since the "New Deal" came into existence, education has been the poor relation of the Federal Government. The national government has pre-empted much of the fiscal capacity of the states and localities. It has aided many other areas of public enterprise. Public education has not been aided except in dire necessity, and then on an emergency, piecemeal basis.

There are growing indications that the Federal Government will eventually take its proper place beside the states and localities in making its indispensable contribution to the financing of education in the United States. The current battle for federal aid for

[2] Harold D. Smith, *The Management of Your Government*, pp. 155-156. New York: McGraw-Hill Book Co., 1945.

education is in many ways a repetition of those won earlier in our educational history; first at the local and next at the state level of government.

The final decision, however, as to whether a first-rate educational program will be financed in the decades ahead will depend primarily upon whether our people gain new conceptions of the social value of this great public enterprise; whether they look upon it merely as a custodial function which keeps children and youth off the streets while they are taught a few skills and facts more or less pertinent to the real business of life; or whether they recognize education as an opportunity for a great social investment which, like all good investments, enhances rather than depletes the resources of the investor. At this point lies the greatest challenge to education of today.

Although the payments of the American people for schools in the past have been an excellent investment, our great industrial democracy has far from exhausted the full possibilities of education as an instrument of national progress. The provision of education right in amount and kind to every American would be an investment which would pay wonderful dividends in individual and general well-being—both tangible and intangible.

We still permit millions of American children to go virtually unschooled. Other millions of youths of proved talent and diligence are denied opportunities to prepare for leadership because economic barriers stand between them and the advanced education which they should have. American civilization, therefore, operates at a lower level of skill and competence than it might achieve.

We soon discovered this fact when we were forced into the war and had to use our full resources, both material and human, in order to survive. We did not haggle about where we were going to get the money to train men for both war and civilian work. We got the money. We trained the men, even in wartime, literally by the millions. We lifted our productivity to a level above our most fabulous estimates.

A century ago Horace Mann and other far-visioned leaders challenged the imagination of a young nation with the possibilities of a free public school system for all. This was something *new* under the sun. The American people accepted the challenge. Their wisdom in establishing public education, after all debits and credits are balanced, has been abundantly justified. Education is undoubtedly one of the important reasons why that particular part of the new world known as the United States has become the most powerful nation in the world.

During the past generation the world has offered demonstrations of the enormous power of education. Too often, however, these demonstrations have been given by the modern despotisms which prostituted this great social instrument to evil ends. It remains for the United States to demonstrate the unparalleled potentialities of education when it is rightly and fully used in a free industrial democracy.

The Horace Mann-Lincoln Institute of School Experimentation

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THE Horace Mann-Lincoln Institute of School Experimentation was organized by Teachers College, Columbia University, in 1943 to conduct curriculum experimentation in cooperation with schools differing in type and community setting. The desirability of such an effort was suggested by several new developments in public education. First, the phenomenal growth of enrollment in public schools, and the accompanying increase in the variability of pupils, point to the need for studying the many problems presented by these new groups of pupils. Second, the marked trend toward community-oriented schools which use and serve their community, as well as work directly for improved community living, makes it important to investigate the school problems inherent in a wide variety of community situations. Third, the rapid development of numerous schools which utilize experimentation as a means of curriculum improvement suggests the desirability of working cooperatively with these institutions in order to pool resources, facilitate the development of this approach, and aid in the interchange and dissemination of findings.

The Institute, as now organized, supports a variety of efforts. However, major attention is being centered on a series of studies which relate to curriculum design. These studies were launched with the beginning of the Institute in 1943, and were planned to run for five years, or until June, 1948. As they illustrate a major phase of the Institute's activity, they will provide the basis for the remainder of this statement.

Those responsible for initiating the curriculum design project recognized certain basic problems: (1) the necessity for a better orientation to the conditions of our technological society, (2) the importance of increased recognition of the characteristics of child growth and development, and (3) the need for more balance, continuity, and unity in the school program.

In the process of developing the present curriculum with its extended, but still limited, opportunities, there has been inadequate orientation to the influences of technology. Through the acquisition of new sources of power and the introduction of machines, distances have lost their importance as barriers, new and complicated questions of relations with other peoples

have emerged, production has been increased, problems of leisure have arisen and, in brief, a new world has been created. Schools in a democracy which is seeking to find its role in such a world cannot be satisfied with a curriculum which is basically oriented to other conditions of life. It will be extremely difficult to achieve a comprehensive re-examination and reorientation of the curriculum of the schools. Yet that is what is needed.

With regard to the second problem, although school programs reveal increasing recognition of the newer knowledge of child growth and development, there are still wide gaps between this knowledge and the best current practice. Much of what is done in education today is in conflict with recent discoveries.

In considering the third problem it must be kept in mind that the curriculum of the schools has grown by a process of addition. Subjects have been added until there is a wide range of opportunities available but insufficient unity. Because of inadequate synthesis and over-all planning, present programs lack balance and continuity. There is an overemphasis on certain aspects of living and an underemphasis on others.

FUNDAMENTAL ANALYSES BASIC TO CURRICULUM DEVELOPMENT

An awareness of these three problems resulted in committees of Institute staff members preparing three fundamental analyses relating to the objectives, content, method, and organizational framework of the curriculum. It was anticipated that these would aid in the identification of problems and help to reveal profitable areas for investigation. A brief description of each analysis follows:

1. *The social foundations of education.* One committee prepared a report entitled "Education and the Promise of America," which analyzes the American tradition and the problems of a technological age, indicating the kind of education that these two conditioning factors suggest. Issued first in mimeographed form for the use of associated schools, the report is now being revised for publication and general distribution.

2. *Child development and the curriculum.* A second committee made a summary and synthesis of the research findings on the physical and psychological growth of children which should be considered in improving the curriculum of the schools. The characteristics of development during infancy, childhood, and adolescence are described in detail.[1]

3. *A design for the curriculum.* On the basis of suggestions contained in the two reports mentioned above, a third committee proposed a plan for an educational program which is significantly different from current practice. This proposal, developed in considerable detail, is being criticized and tried out by associated schools. A mimeographed edition, entitled "Developing a Curriculum for Modern

[1] Arthur T. Jersild and others, *Child Development and the Curriculum.* New York: Bureau of Publications, Teachers College, 1946.

Living," will be revised for printing and wider distribution. Several schools will put the proposal to an experimental test during the next two years.

FIELD EXPERIMENTATION IN ASSOCIATED SCHOOLS

From the very beginning of the project it was recognized that the problems being attacked were of such scope that it would be necessary to bring all possible resources to bear upon them. Also, it was believed to be very important to discover methods of dealing with the variety of problems encountered under a diversity of school situations. Accordingly, a group of schools was selected which represented the numerous conditions and forms of organization commonly found throughout the nation. The total number of schools is limited by the Institute staff resources available for consultative service. The associated schools and school systems participating are: Bucks County, Pennsylvania; Charlotte, North Carolina; Denver, Colorado; Horace Mann-Lincoln School, Teachers College, Columbia University, New York; Kansas City, Missouri; Montgomery County, Maryland; New York City; Radford, Virginia (college and city schools); Springfield, Missouri; Tuskegee Institute, Tuskegee, Alabama (Institute and laboratory schools); West Georgia College, Genola, Georgia (college and county laboratory schools). In some instances a whole system is participating; in others selected schools are working with the Institute.

The work arrangements between the associated schools and the Institute are very simple. The Institute agrees to make the members of its staff available to the associated schools to assist them in work on their problems. Institute staff members bring results of their own studies to the schools, thereby sharing the experience of each center with all of the others. The Institute holds one or two conferences a year of representatives of the associated schools, and conducts a workshop in the summer so that representatives from the schools and Institute staff members can work intensively on the various schools' problems.

The schools associated with the Institute were asked to define areas in which they wished to work. The arrangement provided that Institute staff members should render assistance on a consulting basis and that reports should be prepared which would be of assistance to other schools.

As the cooperative activities have progressed, Institute staff members have functioned primarily by stimulating schools to define their problems clearly, aiding schools to set up procedures for studying and evaluating their programs, and assisting schools to record their procedures and findings in a form that will be of general value to schools throughout the country. Later the Institute staff will undoubtedly give much help in preparing the final reports. The major areas of experimentation and a very brief indication of the approach being taken by some of the schools are indicated below.

1. *General design of the curriculum.*

Several of the associated schools are concerned with ways and means of improving some phase or aspect of their program of general or basic education. There is a belief that the existing curriculum is not adequately related to present conditions of living and that it lacks unity and direction. The exact form of approach to the problem of general education varies from community to community.

One of the schools is working on the improvement of its "general diploma" curriculum, the program followed by non-college pupils. This problem is very common. The pupils in the general curriculum group are not challenged by the usual offering and tend to drop out of school as soon as they reach the compulsory school attendance limit. This school is trying to introduce new courses and is attempting to find a better plan of organization for its offering.

Another school is seeking to improve the general education phase of its program for the pupils of below average ability. Three classes have been organized on a unified basis, and the pupils devote about one-half day to each of two broad core courses. The faculty is trying to discover the kind of program best suited to this type of individual.

A junior high school is experimenting with a different plan of organization. It has two courses, each of which meets two hours per day. One combines English and social studies and the other brings together mathematics and science. The staff is trying to improve these courses through a discovery of: (1) the best ways of helping pupils understand scientific and technological developments, (2) the most effective means for introducing democratic procedures, and (3) the most desirable way of dealing with problems of intergroup as well as person-to-person relations.

A city elementary school has felt the effect in recent years of an emphasis on the activity program and on creative expression. The staff believes that the desire to do effective work on the fundamentals of reading and arithmetic, as well as on the activity program and creative expression, has resulted in undue pressure being placed on children. Staff members are trying to find ways of reorganizing their total programs so that they will have a better balanced and more defensible schedule of activities for children, and still attain all of their present objectives.

In one city the elementary schools are seeking a better basis for their program. The faculty is attempting to define the persistent life problems of elementary school children with the idea of building their curriculum around these. The secondary schools are organizing a general education course which runs three hours a day in the junior high school and two hours a day in the senior high school. The guidance program in the secondary school operates very largely through this general education course.

Two cities are in the process of changing over from an eleven- to a twelve-year program. This is accomplished by introducing a new Grade VIII. They are planning new content

and a modified organization of the school day. Both cities hope to carry this reorganization on through the remainder of the secondary school years.

2. *Economic competence.* Several schools are endeavoring to develop programs which will aid pupils in earning a living, in spending their income wisely, and in understanding the economic problems with which they must deal as citizens.

One city has about seventy-five boys spending one half of each day working in a great variety of businesses and industries. One hour of their time in school is spent in a class devoted to a consideration of employee problems, consumer problems, and economic issues. The teacher supervises their work experience. This program is being tried experimentally to see if means can be found for contributing effectively to economic competence.

Another city has a work-experience program very similar to the one described above. In addition it is introducing materials on economics at other points in the elementary and secondary school.

One county is trying to provide work experiences for children in the elementary and secondary schools. Rather than have them work for money, as in the two cities just described, this county is experimenting with a program in which work opportunities are arranged at home, in the school, on the playgrounds, and in community agencies. The importance of accepting responsibility for a job and carrying it through effectively is stressed.

The laboratory schools of one of the teacher educating institutions are approaching economic competence from the standpoint of increasing income through raising more appropriate products, building suitable houses, and securing proper foods. Parents, children, and teachers are engaged in constructing a new cement block building which is to be a practical demonstration of an improved type of home which citizens can build for themselves. Parents and children are studying ways and means of improving their present very low standard of living.

3. *Cooperative planning.* Several schools are recognizing the importance of cooperative action in a democracy and have been seeking to improve the techniques of teachers working with teachers, teachers working with parents, and pupils working with other pupils and teachers. To this end they have sought to determine the best methods of working cooperatively and have attempted to put these into practice.

One city has had a large committee of teachers at work on this problem, preparing suggestions for all schools in the city. One county is attempting to introduce a great deal of planning into all classrooms situations. It is also encouraging whole schools, through their classrooms, through joint meetings of two or more classes, and through school assemblies, to plan major school activities and improvements.

4. *Health.* As a result of the war experience and a general public interest in health, schools have renewed

their efforts to provide effective health programs. They are experimenting with various ways and means of improving health status and developing healthful habits of living.

One city has made a careful study of the health interests and problems of children at each level from Kindergarten through Grade XII, and is now in the process of building and experimenting with a new health program.

Another city has twelve schools engaged in experimenting with five different approaches to the teaching of health. They are gathering suggestions regarding good learning experiences and successful teaching methods for the various age levels.

Two other associated centers are engaged in similar projects on health. Both are working on a city-wide basis in the elementary and secondary schools and are doing a considerable amount of work in cooperation with parents and public health officials.

5. *Children's needs and interests.* As a result of the general analysis of child development and the curriculum discussed earlier, several schools are seeking to fill gaps in knowledge concerning the interests of children at various maturity levels. Many necessary improvements in the curriculum could be made if scientific information were available regarding the interests of children and their reactions to various problem situations at each stage of maturation.

One center is studying the response of children at the various grade levels to events of world-wide import, such as the death of Roosevelt or the Fulton, Missouri, speech of Churchill, and to local community agencies and programs.

One city is studying children's interests and needs in order to determine the improvements which can be made in the psychological conditions of the classroom and the specific changes in practice which teachers should make.

STAFF AND STUDENT RESEARCH AND INVESTIGATION

While the problem areas defined by the associated schools deal with many of the needs revealed in the fundamental analyses described above, there are several other potential areas of study which the Institute staff consider of crucial importance. Four areas for research and investigation by the staff and associated students have, therefore, been outlined.

1. *Human relations.* The great concern of people everywhere, and of teachers in particular, with problems of human relations made this appear to be a necessary focal point. All types of relationships including the informal person-to-person contacts, the techniques of working within a group, intergroup relations, and even international relations are increasingly becoming a concern of the schools. It is extremely important to define more clearly just what the schools can expect to do in this area and how it can be done most effectively.

A start has been made in one center to determine the actual human relations of children at various age levels and the adequacy of other opportunities. In a small urban community the ele-

mentary school is studying ways of handling a perplexing interracial problem.

2. *Technology.* The great implications of technological developments for the schools make it imperative that further investigations be made of the changes in content, method, and plan of organization of the schools which may be needed to cope with emerging conditions. Three centers indicate an interest in starting exploratory work in this area.

3. *School and community.* Most educational developments in recent years have called for a closer relationship between the school and its supporting community. The work experience and health programs already described demand school–community cooperation if they are to succeed. Schools are increasingly using their community, and communities are using their schools. It is important to investigate how these relationships can best be instituted and fostered. It is contemplated that outstanding school–community programs throughout the country will be carefully studied. In addition, an interesting project is being undertaken in a rural center. The teachers, the local improvement association, and the county superintendent's office are re-examining the total educational program. Attention is being given to a variety of problems, such as the ways of securing better health conditions and pure water in the schools and the possibility of consolidating schools and building a new community center. The teachers are now working on the improvement of the art program, stressing the everyday applications in home, school, and community. Careful records are being kept and information will be gathered to determine the outcomes of the program. It is hoped that this will be a demonstration of the ways in which education can be improved in a rural community through concerted community action.

4. *Curriculum change.* The whole curriculum design project is concerned with the improvement and the modification of the curriculum. Strangely enough, there has been little thorough investigation of the barriers to curriculum change or of the means and methods by which change can be hastened. Throughout the work on this project, an effort will be made to study the process of curriculum change in order that schools of the nation may be aided in making the shifts that are found to be necessary.

Each of the above four areas of research and investigation is under the direction of one or more staff members. An over-all plan of attack has been outlined for each area, and a beginning has been made. As graduate students are located who have started doctoral projects or dissertations in these areas, they are given the assistance of the Institute staff. Other students with vital interests in these areas are aided in outlining investigations which supplement and relate to other studies under way. This participation of doctoral candidates not only increases the resources available for studying problems, but provides valu-

able research opportunities for those who wish to relate their work to major current curriculum investigations.

PUBLICATION AND DISSEMINATION OF FINDINGS

If the Institute is to serve effectively the schools of the nation, it is important that its findings be made generally and easily available. Arrangements have been made to publish the fundamental analyses indicated above and all reports on the various research studies. It is planned to publish eventually a series of books including possibly one or more summary volumes for the curriculum design project. Publication of this series will begin in the very near future. In addition, it is contemplated that a number of pamphlets and monographs will be prepared. These may describe outstanding programs, list materials available for use in a particular area, or present an analysis of some important problem.

Consideration is being given to the possible production of films and the use of conferences and other means to bring the findings of the Institute to teachers and parents.

The actual development of effective and outstanding programs in associated schools is recognized as an important means of disseminating information. These programs will constitute living testimonials and demonstrations in the various areas of study.

INSTITUTE PROCEDURES SUBJECT TO CONTINUOUS REVISION

The Institute program is thus seen to have four emphases: (1) the preparation of fundamental analyses basic to curriculum development, (2) field experimentation in associated schools, (3) staff and student research and investigation, and (4) publication and dissemination of findings. Eleven staff members are working on the curriculum design project. Attention is directed continuously to the improvement of methods of cooperative research and the development of better ways for effectively utilizing the combined resources of Teachers College and public schools in furthering curriculum experimentation and in discovering more satisfactory approaches to the solution of curriculum problems.

The Globe and the Map

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CIVILIZED man's use of abstract symbols is the principal trait which distinguishes him from savage man. Take away alphabets, mathematical symbols, chemical denominations, monetary signs, maps, blueprints, graphs, cross-section diagrams, and the other common symbols, and the average civilized man does not differ materially from the savage. That being true, symbols and symbolism merit a great deal more attention than is usually accorded them.

The map is a noteworthy case in point. It is one of the more common symbolic devices. It is practically the only vehicle for bestowing real geometric quality upon human ideas (that is, for engendering spatial, directional, and distributional concepts). Its practical applications are ubiquitous and its educational usefulness is well-nigh unlimited. Nevertheless, of all the common symbols the map is probably most neglected, least understood, and oftenest misused by educators as well as by laymen.

The use of maps is rapidly increasing. Newspapers, magazines, textbooks, and advertising literature, during recent years, have employed more and more maps. Each year additional uses for maps have been discovered—some of which are quite disconcerting to the untrained reader. What is even more disconcerting to him is the fact that maps of new and strange shape and basic design have made their appearance. All of this has tended to confuse rather than to enlighten the average person. Even most teachers find themselves unable to understand and readily explain the kinds of maps with which they are daily confronted.

Understanding the map is not difficult if certain basic facts are known, and if one resorts to careful classification of those facts. Indeed, classification is the only key to the understanding and teaching of symbolic materials of all kinds.

MAPS AND GEOGRAPHY

Confusion of Terms. For some reason, a great many Americans have the erroneous idea that maps are essentially geographic; indeed, that maps and geography are synonymous. Equally common is the belief that skill in making, or even in reading maps denotes competence as a geographer. A knowledge of great numbers of place locations on the map also is frequently mistaken for geographic erudition.

The Map Is a General Instrument. The actual fact is that maps are not

geography. The map is a visual instrument of general nature. It belongs to all educational subjects equally—history, botany, geology, economics, and so forth. It also belongs to the military man, the engineer, the stock broker, and the journalist. There is nothing geographic about the map as such.

Cartographers. Nor are maps ordinarily made by geographers. They are made by men trained in mathematics and mechanical drafting; an artistic sense and a flair for design are definite assets to the map maker. Men who make maps are called cartographers, and if a geographer happens to be a cartographer it is merely a coincidence. Most geographers are not cartographers. A few very competent geographers are not even very good at reading and interpreting maps.

Despite what has just been said about maps and geography, it is perfectly true that geography makes greater use of maps than any other subject, and that geographers as a group are more skillful users of maps than men in other professions. In general, all phases of visual education have been seriously neglected in most fields of learning. Long before students in other fields did so, geographers began using on a large scale visual instruments of all kinds—pictures, models, graphs, and plan sketches, as well as maps.

The fact that geography began very early to develop the map and to use it so extensively probably explains why the layman so often identifies one with the other. Certainly the student of geography must be prepared to accept the map as one of his major tools and must be willing to train himself to understand and use it. If he dismisses the matter by saying, "Oh, I never could understand maps," then he should know that his chances of success in studying geography are indeed small.

Why Geographers Use Maps. The chief reason why geography depends so heavily on maps has been aptly stated by James, one of America's leading geographers. Said he, "In geography, the phenomena to be described and analyzed are so much larger than the observer . . . [that they] can only be studied or described by reducing them to observable size on maps."[1] Geography is on the earth, not in books, but the geography which man sees about him is only the infinite number of details, not the important relationships which these details illustrate or exemplify. For instance, one could live and observe all his life in a Midwestern community without perceiving the Corn Belt. Similarly, one could live out his life in a New England town without perceiving the American Manufacturing Region. But plot the relevant data on a map of the United States, and the Corn Belt and the American Manufacturing Region are immediately apparent, whereas the two communities in question are revealed as inconsequential details in the big pattern of things. Without the use of the map most of the large, important things in geography would remain unknown and many generalizations would be impossible. For this reason it is desirable

[1] P. E. James, *An Outline of Geography*, p. viii. Ginn and Company, Boston, 1935.

at the very outset to obtain a clear and concise idea of the nature of the map.

The Nature of Maps. Any map is a diagram of the earth's global surface or some part of the earth's surface which is drawn on a flat plane. "The real problem of the map makers is that when one projects any considerable area of a globe *on a plane,* one sacrifices either true distance, or direction, or area, or all three."[2] For instance, on a world map on which directions are true, shape is sacrificed. When an effort is made to get true shape, then area or size is sacrificed. If the area is true, then distance and direction are sacrificed, and so on.

In a map of a very small piece of the earth's surface, the errors are small —usually too small to make any difference. But the larger the area represented, the greater the errors. Therefore, there is no accurate map of the world as a whole except that on the surface of a miniature or model globe. In order to understand the world map, then, one must understand the globe. But to understand the globe, one must first know some important things about the earth as a planet.

THE EARTH AS A PLANET

Earth and Sun. The earth is a large ball or sphere of rock some 8,000 miles in diameter, the depressions on which are filled with water. The whole is set inside a shell of gaseous atmosphere. It is suspended in space and tied to a near-by large star known as Sol (the sun) by the enormously strong but invisible bonds of gravitation. The distance at which the sun holds the earth averages about 93,000,000 miles. Sol itself is a huge sphere nearly a million miles in diameter, and so hot that its surface temperature exceeds 10,000° F. Within its body, nuclear fission is probably taking place in great chain explosions of atomic energy. As a consequence, Sol is giving off waves of radiant energy which spreads outward in all directions at a speed of 186,000 miles per second. About one-billionth of this energy falls on the earth. The amount of energy continually pouring onto the earth is about 100 trillion horsepower, or about one horsepower continually on each square yard of earth surface. Of course, the sun shines upon only one half of the earth at any one time, the other half of the earth lying meantime in darkness and twilight.

A Moving Earth. Fortunately the earth is not stationary and therefore it does not have a hot side and a cold side. Instead, it spins round and round like a giant top at an equatorial speed of more than 1,000 miles per hour, taking twenty-four hours to complete one turn. At the same time, it hurtles forward at nearly 90,000 miles per hour following a giant lopsided circle about the sun—taking 365¼ days to complete one trip. The earth's spinning motion (rotation) serves the useful purpose of compelling the earth's surface to move through alternate periods of light and darkness, thus producing the effect of nighttime and daytime. This tends to distribute the heat resulting from the sun's rays (insolation)

[2] R. Peattie, *How to Read Military Maps,* p. 62. G. W. Stewart, New York, 1942.

which fall on the earth's surface in such manner as to make most of the earth habitable. The speed of rotation determines the length of the earth's day.

The forward speed of the earth around its orbit determines the length of the earth's year. The number of spins the earth makes during the time required to complete one revolution around the sun is 365¼. Thus the year (one revolution) is divided into days (rotations).

Parallels of Latitude. The spinning of the earth on an axis establishes two fixed points, or poles, on the earth's surface. For the sake of convenience, one is known as the North Pole, the other as the South Pole. The poles cannot be seen by the human eye, but a surveyor can locate them with instruments; hence they are real things. Midway between the two poles the mathematician can draw a line known as the equator (equal divider). Between the equator and each pole it is also customary to draw 89 more circles around the earth to divide the curved distance between pole and equator into 90 parts known as degrees. The degrees are numbered (from 0 at the equator up to 90 at either pole) in order to measure latitude or curved distance north or south from the equator. These parallel circles of latitude then serve as reference lines.

A Tipped Earth. Fortunately for mankind (but unfortunately for beginning students of earth science) the unseen axis on which the earth spins is tipped out of a vertical position by an angle of 23½ degrees. The fact that the earth spins in a tipped-over position and does not swerve from it even while making its immense circle about the sun,[3] produces a bewildering set of complications. At times, the earth leans sidewise with respect to the sun, but both the northern and southern halves of the earth take turns leaning away from it.

As a consequence, sometimes the sunshine equator[4] coincides with the geometrical equator; at other times it lies far north of it, or far south of it. The limits of this annual wandering of the sunshine equator trace out two lines around the earth known as tropical circles. The surveyor draws them about the earth and uses them as reference lines.

When the earth leans sidewise in relation to the sun, the rays of sunlight just reach each pole. But when the northern half of the earth leans into the sunlight, the rays of the sun spill across the North Pole and for a time bathe the Arctic regions in continuous sunlight. This, of course, means that the sun's rays fail to reach the South Pole and for a time the Antarctic regions rotate in darkness. When the southern half of the earth leans into the sunlight, conditions are exactly reversed. This circumstance traces out two more circles around the earth, the polar circles, which also serve as reference lines on the globe.

North–South Reference Lines. Thus, the fact that the earth rotates on a tipped axis and revolves about the sun establishes the poles, the polar circles,

[3] That is, the earth's axis remains constantly parallel to itself in all positions on its orbit.

[4] The line where the sun's rays fall vertically upon the earth at noonday.

the tropic circles, and an equatorial circle. These, together with the 178 parallels of latitude, form a north–south reference system for the earth.

Meridians of Longitude. Running across these latitude circles at right angles, a second set of circles is drawn on the earth by the geo-mathematician. These are not parallel to one another, but instead are laid out so as to intersect at each pole. Stated in another manner, they radiate outward in all directions from the North Pole, curve about the globe, cross the equator at right angles, and again intersect at the South Pole. Each circle, therefore, is a complete circumference of the earth and hence is an equator. The term meridional circle is, however, applied to it. A half-circle, extending from one pole to the other, is known as a meridian. There are 359 meridians—dividing the distance around the earth into 360 equal parts (there are 360° in a complete circle). Actually only one meridian out of every ten, fifteen, or twenty is ordinarily shown on a map or globe.

The two sets of lines (parallels and meridians) compose the earth's grid or coordinate network. By means of it, places on the globe can be located accurately. Since all of the meridians are alike, it has been necessary to select one of them arbitrarily as a starting line. The one running from pole to pole through Greenwich, England (a section of London) has been chosen as the zero line or prime meridian. The other half of this circle (longitude 180°) is mathematically the international date line.

THE GLOBE

Characteristics. This, then, is the kind of earth on which man lives. The model globe must, therefore, embody the main earth features just described. It is spherical and it has two poles, two polar circles, two tropical circles, and an equator (Figure 1). Usually, but not always, it is mounted so as to turn on its axis, and to rotate at an angle of 23½° inclination from a vertical position.

FIGURE 1

The globe also has a system of coordinate lines—parallels and meridians—carefully numbered north and south from the equator and east and west from the prime meridian. Over these lines is drawn the tracery or outline of the land and water bodies of the earth. Since the shape and arrangement of the parallels and meridians on the globe are exactly like those on the earth itself, the land and water bodies on the globe are shown in true shape, true relative size, and in true relation to one another.

These are something which no flat map can show accurately.

Upon the outline, in turn, are printed the data of the globe. Rivers, lakes, and oceans are usually shown in blue; the land is often shown in buff or sand color. Political boundary lines are shown in broken black lines or narrow ribbons of color. Or, if the globe is primarily designed to show political divisions, each individual country is depicted in a different color. Or, if the globe is primarily to show physical relief, the lands are colored according to their general elevation above sea level. Cities are indicated by dots, and place names are printed usually in black. Other data are indicated by special symbols.

Each globe has a scale or ratio. The earth is about 8,000 miles in diameter and, therefore, on an eight-inch globe (that is, one eight inches in diameter) one inch represents about 1,000 miles on the real earth globe. On a sixteen-inch globe, one inch represents 500 miles, and so on.

Disadvantages of Globes. Globes are relatively costly to make. They are also relatively small. Even so, they possess the disadvantage of being clumsy to handle and almost impossible to carry about. Another shortcoming of the globe is that it never enables one to see all of the earth at one glance. Nor does it enable one to see any one section of the globe in great detail. All of these shortcomings make it necessary to use a map rather than a globe for most purposes.

THE MAP

Map Elements. A map is simply the product of an attempt to transfer the curved surface of the globe to a flat surface. The difficulties in doing this have already been pointed out, but the resulting product is highly useful nevertheless.

There are three elements to the map —the projection, the outline, and the data. The spherical grid of lines on a globe cannot be reproduced upon a flat surface, but there are various ways of *projecting* it onto a flat surface. Therefore, in the process of map making, the grid of the globe is transformed into a map's *projection.* The projection of a map is one of its identifying features. The shape of the outline of land and water on a map depends wholly upon the projection used. This is true because every point of the outline must fit the lines of the projection, regardless of how warped or twisted the shapes become. The reason for this is that every point on the earth has an exact latitude and longitude. Two cities lying on two different meridians may actually be relatively close together on the earth. But if, in the process of projecting the meridian onto a map, they become pulled far apart, then the cities must be placed equally far apart on the map in order to keep their true longitudes. A narrow lake lying between these same two meridians must be elongated enough to reach from one meridian to the other on the map. A parallel is a straight line on the globe, but if the parallel becomes curved in the process

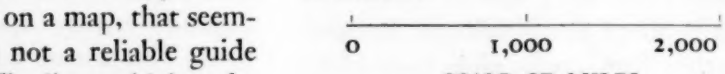
of projecting it onto a map, then a relatively straight river, railway, or boundary line following that parallel must be curved on the map. If all these distortions are not made in entering the outline and the data on a map, then the outline and data do not fit the mathematical facts of the grid or projection; whereupon the map is inaccurate and largely unusable. Despite these distortions, the shapes of land and water bodies, political units, and other data are still recognizable, but obviously they cannot be exactly the same as the shapes on the globe itself. One must be able to recognize areas, shapes, and data no matter upon what projections they are placed.

The same is true with regard to directions. No matter what appears to be north or south on a map, that seeming appearance is not a reliable guide in map reading. The lines which make up the projection determine the directions, regardless of what is the top, bottom, or sides of a map. The only safe rule to follow is that North and South on a map are always measured along the meridians, whereas East and West are measured along the parallels.

Map Scales. Maps often distort size as well as shape and direction. In reading a map, therefore, careful attention must be paid to the scale or ratio. On some projections two or more scales must be used. On the Mercator, indeed, a different scale must be used for every latitude. The same is true for equidistant pole-centered maps.

Maps which use one scale throughout are known as *homolographic* or equal-area projections. On such a projection, one square inch of surface represents the same area of earth anywhere on the map.

It should be recalled that the earth's diameter is roughly 8,000 miles, and that the distance between the poles along the surface of the earth is approximately 12,500 miles. Therefore, a world map which is 12½ inches from pole to pole may be said to have a scale of 1 inch to 1,000 miles, because one inch on the map represents 1,000 miles in nature. Another way to state this is to put it in the form of a fraction, 1/63,360,000 because one inch on the map represents 63,360,000 inches (1,000 miles) in nature. Or it can be expressed as a ratio—1:63,360,000. Still another way is to express it graphically as follows:



SCALE OF MILES

This ratio of 1 inch to 1,000 miles is a very large one. Hence maps of the world or considerable parts of it are known as large-scale maps. On the other hand, maps of small areas whereon 1 inch represents a city block, or one mile, or some other inconsiderable distance are known as small-scale maps.

Kinds of Map Data. The third element on a map is the data. Maps are invariably classified by the user on the basis of what datum or data they may show. For instance, the user refers to a map as a population map, a wheat map, a rainfall map, a relief map, a daily weather map, a political map, or a blank map. The legend of each carries an explanation of its datum or data.

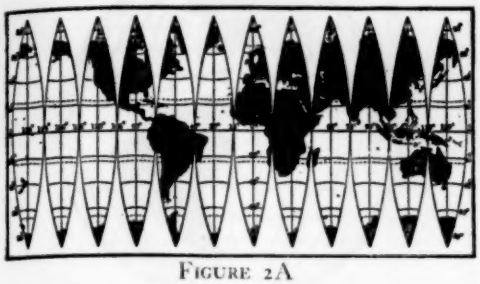


FIGURE 2A

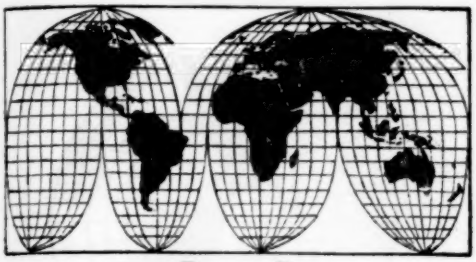


FIGURE 2B

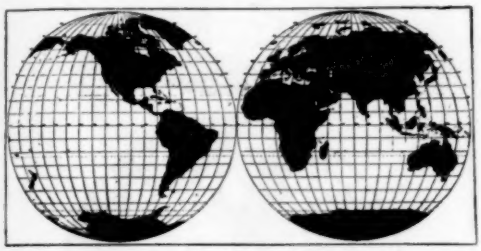


FIGURE 2C

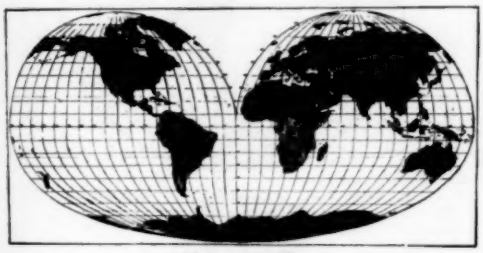


FIGURE 2D

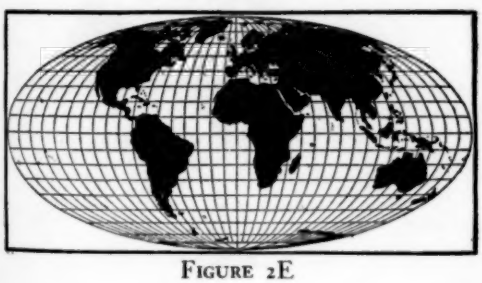


FIGURE 2E

KINDS OF MAP PROJECTIONS

The number of different map projections is large; so large, indeed, that the layman is often bewildered. The matter can be greatly simplified, however, by realizing that there are really only three main classes of projections. These are: globe-skin maps, perspective maps, and geometrical-surface maps.

Globe-skin Maps. The skin or surface of a globe is actually a world map. When it is peeled off and flattened, it makes the only true map of the world. In this peeling process, however, it will be torn into pieces, unless the skin is slit along the meridians. If the latter is done, the skin will come off in gores or segments connected in their equatorial portions. This might then be called a *gore projection.* The first one was probably made about the year 1500, when the making of globes began. (Figure 2A)

If some of the gores are pinched together so as to show each continent in one piece, the result is the *interrupted homolographic projection,* first made by Goode in 1916. (Figure 2B)

If more of the gores are pinched together, more warping is produced, but it is possible to get them into two hemispheres. Mollweide made a hemispheric projection of this kind about 1800. (Figure 2C)

Still more pinching together gives Renner's *semi-hemispheric projection* of 1928. (Figure 2D) Finally, if all the gores are pinched together, it gives Mollweide's *homolographic projection* of 1805. (Figure 2E)

Perspective Maps. A wholly dif-

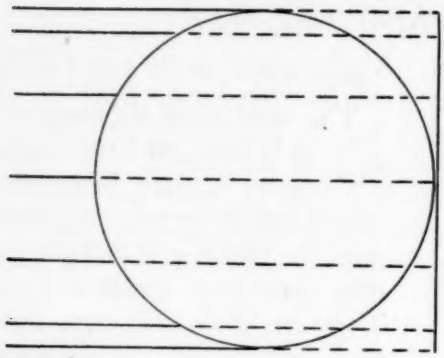


FIGURE 3A

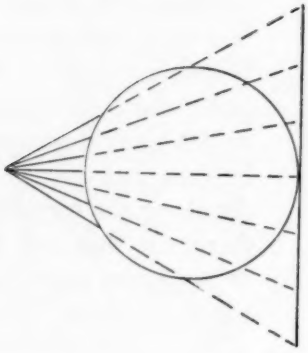


FIGURE 3B

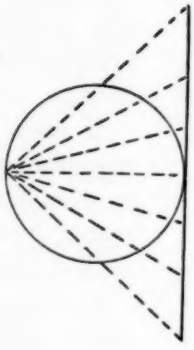
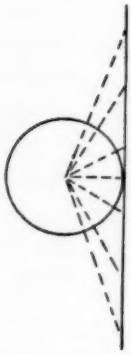


FIGURE 3C



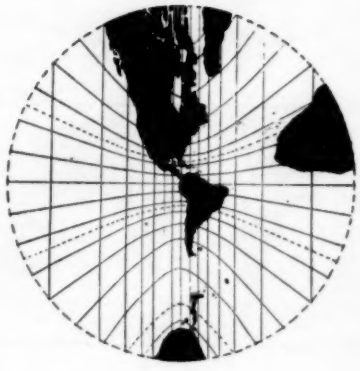


FIGURE 3D

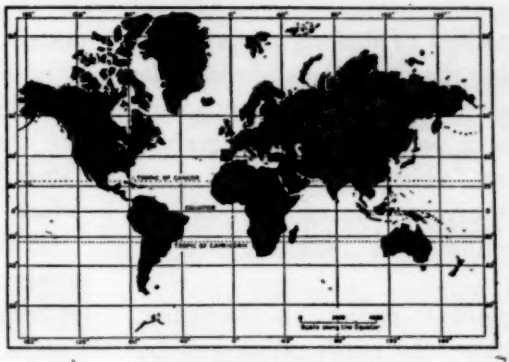
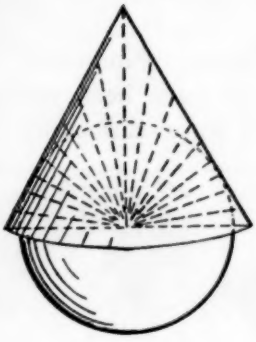


FIGURE 4A



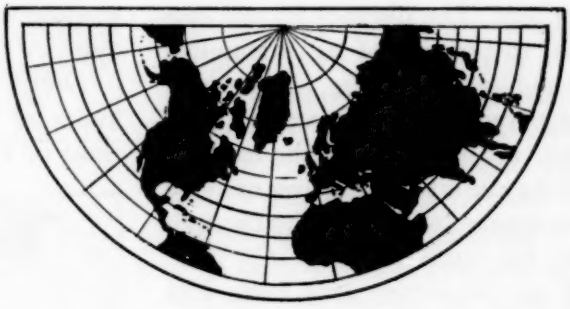
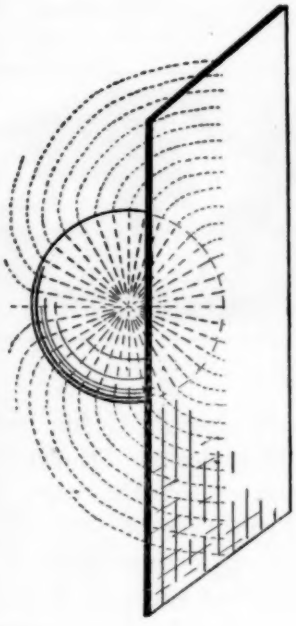


FIGURE 4B



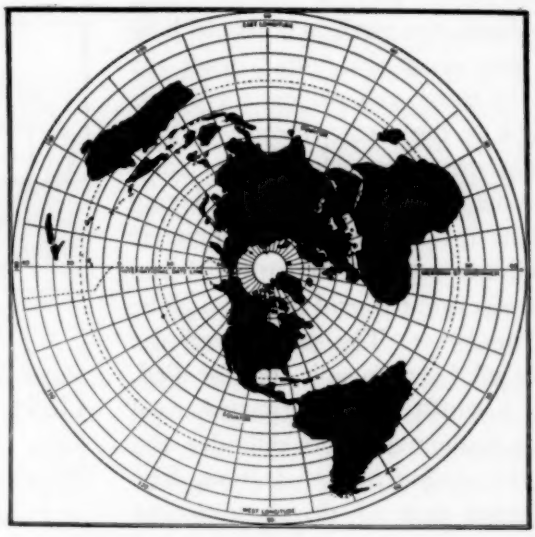


FIGURE 4C

ferent method of making maps is that of drawing the two halves of the globe as the eye would see them from various vantage points. The *orthographic projection* (Hipparchus 130 B.C.) depicts the near side of the globe as seen from a great distance. (Figure 3A)

The *globular projection* (Fournier, 1645) shows the earth as viewed by an eye placed at a distance from a transparent globe, looking through to the far side. The distance in this case is equal to the sine of 45° multiplied by the radius of the globe. (Figure 2B)

The *stereographic projection* (Hipparchus, 130 B.C.) shows the earth as seen if the eye is placed against one side of a transparent globe, looking through to the far side. (Figure 2C) The *Gnomonic projection* (the basic idea for which is said to have originated with Thales about 600 B.C., although probably such maps were not constructed until the seventeenth century) shows the earth as it would look to an observer at the center, inside the globe. In short, this map is a gnome's eye view of the earth. (Figure 3D)

Geometric-figure Maps. The commonest maps in use are made by placing the globe inside some other geometric solid figure (usually tangent to it) and then projecting the grid from the globe onto the latter. The surface of the tangent solid is then split and unrolled, giving a world map. If the spherical globe is projected onto a cylinder, the result is a *cylindrical projection.* The commonest map of this type is the Mercator projection (1569), named after Gerhard Kramer, who made maps under the pseudonym of Mercator. (Figure 4A)

If the globe is projected onto a cone, the result is the *conic projection* (Ptolemy, A.D. 150), one type of which is shown in Figure 4B.

If the globe is projected onto a tangent plane, the result is the *azimuthal* equidistant projection (Postel 1581). Figure 4C shows the global grid projected onto a plane tangent at the North Pole, giving a north polar equidistant projection of the azimuthal type.

Other Types. Numerous other types of maps have been made, but most of them are modifications of the

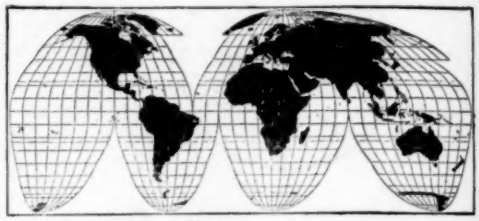
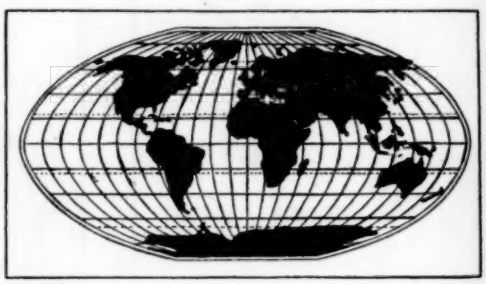


FIGURE 5A



three classes described, for instance Goode's Homolosine Projection of 1929 (Figure 5A) or Denoyer's Semi-elliptical Projection of 1921 (Figure 5B). Others are combinations of two or more standard varieties. A few are chiefly interesting freak projections.

REPRESENTING DATA ON MAPS

There are numerous ways of plotting data on a map, many of them so conventionalized as to require explanation. A road, railway, river, or airway may be represented by a certain kind of line. If so, one may easily interpret it by referring to the legend of the map. A map of land relief is sometimes made by sketching the relief in detail. A map of this kind is so graphic as to be readily interpreted.

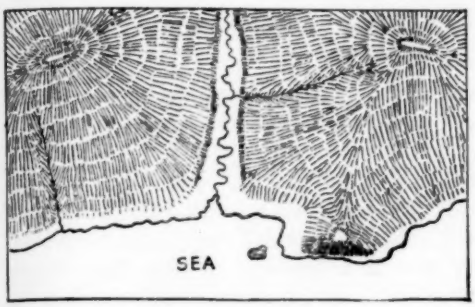


FIGURE 6A

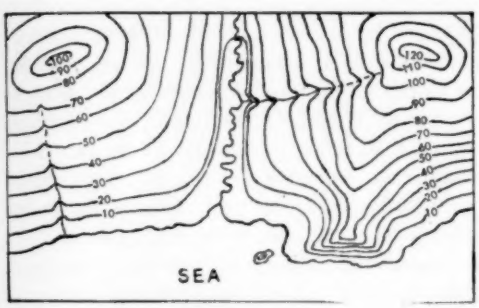


FIGURE 6B

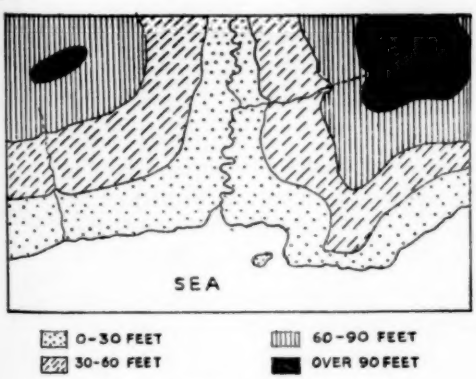


FIGURE 6C

More commonly, however, land relief is shown by one of three symbolic devices, hachures, contour lines, or vertical layers (colors or black-and-white Ben Day Patterns), as shown in Figures 6A, 6B, and 6C.

Where one wishes to show only the separation of an area into sections, as on political or regional maps, the sections are simply colored differently, or covered by different-black-and-white patterns. Sometimes, indeed, they are merely separated by boundary lines and then named or numbered.

In cases where it is desired to show accurate distribution of some datum, such as telephones, or wheat production, or population, the dot method is used. If, for instance, one dot represents 1,000 bushels of wheat produced, and the dots are entered in their proper places, the location of the dots shows at a glance where wheat is produced. At the same time, the spacing of the dots reveals the places where production is sparse or heavy.

SELECTION OF MAPS

Each map projection and each method of representing data has its own merits and demerits. Moreover, one projection is useful for certain purposes but useless for others. For instance, a geographer knows that the Mercator map is excellent for showing world trade routes, the conic map is ex-

cellent for showing the countries of Europe, and the North polar equidistant map is excellent for showing air-age relations. But no geographer would use Goode's homolosine map of the continents to show ocean trade routes, Mercator's map to show air-age relations, or a gnomonic map to show colonial empires. The selection of the proper map for each use requires considerable discrimination. Meanwhile, new kinds of maps continue to be designed, and new uses are daily being found for both old and new maps.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY
REGISTER OF DOCTORAL DISSERTATIONS

ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Volume 2, Fourth Annual Supplement, 1945

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educational missionary in China, 1807-1937; a documentary study of the changing attitudes and practices of Protestant educational missionaries relative to their role in China, based primarily upon *The Chinese Recorder* (1868-1937), *The Educational Review* (1909-37), together with its predecessor, *The Monthly Bulletin* (1907-8).
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In press.

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Health in high school science; the implementation of a philosophy of health teaching in high school science with a study of accompanying changes in pupils.
To be published.

119. MASE, DARRELL JAY
Etiology of articulatory speech defects; a comparison of the incidence of six selected factors in children having articulatory speech defects with the incidence of the same factors in children not having speech defects. New York, Teachers College, 1946.
In press.

120. MILTON, JENNIE LOU
Courses in children's literature in colleges and universities in the United States.
To be published.

121. OAKES, MERVIN ELIJAH
Children's explanations of natural phenomena. New York, Teachers College, 1946.
In press.

122. THURSFIELD, RICHARD EMMONS
Henry Barnard's *American Journal of Education*. Baltimore, The Johns Hopkins Press, 1945. 359p.
Published without thesis note as The Johns Hopkins university studies in historical and political science, series 63, no. 1.

123. ZAKI, ABD-EL-HAMID M.
Some aspects of child welfare in a rural community. New York, Teachers College, 1946.
In press.

Recent Doctoral Studies

CLOTHING AND APPEARANCE*

THEIR PSYCHOLOGICAL IMPLICATIONS FOR TEEN-AGE GIRLS

ALTHOUGH many studies of interests and problems of adolescent girls have indicated that clothing and appearance are of major importance to this age group, relatively little research has been done specifically in this area. The present investigation was undertaken as a means of gaining insight into girls' clothing and grooming behavior as it is operative in adolescence.

In order to do this four problems seeking factual information as well as relationships were studied.

1. Girls' actual clothing and grooming behavior were considered first: their use of cosmetics, choices of clothing, and preferences in jewelry. A distinction was made between daily and week-end use to discover whether there were differences in behavior in the two situations. A questionnaire consisting largely of checklists and objective type questions was employed to obtain this information. The questionnaire was submitted to a group of high school students aged twelve to eighteen in grades seven to twelve. The school was in a town which had a population of approximately 13,500 and which was within easy commuting distance of New York City. Responses to the questionnaire were received from 373 girls. After these responses were tabulated by age, the Chi-Square Test was applied to ascertain significant relationships between age and responses.

Several patterns emerged for the use of cosmetics. Some items, such as powder and lipstick, were used by a very small proportion of the group at age twelve and thirteen, their use increasing steadily as the girls grew older. Others, such as rouge, had their inception later and never reached the same extent of use as the first two. Items utilized for hand care had a large proportion of use beginning at age twelve. Eyes appeared to receive a minimum of attention in grooming practices. The use of cosmetics tended to increase for week-end occasions, when more than one-third of the twelve-year-olds and more than one-half of the thirteen-year-olds were using powder and lipstick.

Strong similarity rather than age differences marked the mode of dress of the entire group, girls aged twelve through eighteen tending to dress in like fashion. However, this applied only to daily wear, not to week ends.

No item of jewelry was worn by more than two-thirds of the group; most items by a considerably smaller proportion. Ornaments symbolic of membership tended to be worn less than purely ornamental jewelry.

2. The same questionnaire was also used to study the influence of the economic factor on clothing and grooming behavior. A series of questions designed to estimate economic level was adapted from standardized tests, and the upper and lower 25

*By SYLVIA S. SILVERMAN, PH.D. Teachers College, Columbia University, Contributions to Education, No. 912.

per cent of the economic distribution for the entire group were compared for their use of cosmetics and their mode of dress. Relatively slight differences were found between the two groups.

3. Factors influencing girls' attention to appearance and their choice of clothes were studied in a questionnaire made up of 59 items. Three alternative statements were included for each item, the student checking the one most closely expressing her own reaction. Statements were made concerning preferences, opinions, and attitudes, psychological satisfactions sought, the associated values, the importance of judgments, and the relationship of the girl and her mother, each in relation to clothing and appearance. Significant trends with age were again sought.

The desire for approval, for a feeling of poise and self-confidence, and the desire for sexual attractiveness were factors influencing attention to appearance and choice of clothing to approximately the same extent throughout the age range, the differences for age being relatively small. The belief in the social and vocational advantages of clothing and appearance were likewise marked by a homogeneity of opinion for all ages. For the most part younger girls evidenced as much interest in clothing and appearance as did older girls. Girls tended to agree with their mothers regarding the suitability and choice of their clothing, but indicated that their mothers were critical of the time the girls devoted to grooming. Many of the significant trends with age were for those items suggesting a greater independence of choice of clothing. In relation to the questions the girls would put to a clothing expert, the responses indicated that the group was interested primarily in learning the details of dress and the grooming techniques which would increase their attractiveness and express their individuality.

4. The major emphasis of the study was on the investigation of appearance behavior in relation to aspects of personality. Appearance behavior is differentiated from appearance in this part of the study in that it refers to the personal care and the choice of dress shown by the individual, rather than to the degree of aesthetic perfection of her face or form. The group studied was made up of 170 girls, constituting the eleventh and twelfth grades of the school previously mentioned. They were rated by three teachers on six components of appearance: grooming, personal cleanliness, neatness, taste, and appropriateness in clothing, and carriage or bearing. They also answered the Sheviakov and Friedberg test of personality entitled "Interests and Activities," which is designed to measure both personal and social adjustment.

Several case studies were made to investigate the significance of appearance behavior in individual instances. The three poorest-appearing and the three best-appearing girls, according to teachers' ratings, were studied intensively. Appearance behavior was found to be related to the girls' background and to their past experiences, and gave evidence of being used as a means of working out their needs or conflicts.

FINDINGS

The findings have several implications for education. The interest of both the younger and the older adolescents in clothing and appearance, the satisfactions and approvals they seek through them, and the problems for which they desire answers all indicate that these are areas which merit considerable attention from the school to help girls meet their needs. The school can help girls meet these needs by adopting the functional approach to the study of clothing, working primarily along the lines of the girls' own interests in dress and grooming. The extent of the interest, the grooming behavior, and the seeking of satisfactions through clothing and appearance by even the youngest adolescents suggest that such courses could do much that is constructive if begun early.

The school can also aid the girl by interpreting her attention to appearance to parents, stressing the importance and significance of this interest in the girl's grow-

ing up process, that a better understanding may be reached of her attempts to make herself more attractive.

The study also suggests that the girls exhibiting extremely poor appearance behavior might well benefit both socially and personally by the aid of a counselor in gaining insight into their appearance behavior and in working out a better solution to this problem.

CONTROLLED EYE MOVEMENTS IN READING*

THE use of mechanical devices for controlling eye movements in reading is widespread, but the effectiveness of reading under conditions of controlled eye movements, as compared with other means of improving reading, has not been definitely established. The purpose of this study is to compare three methods of improving the reading speed and comprehension of college freshmen. They are: (1) college work with no special exercises in reading, (2) college work with practice on special reading exercises, and (3) college work with practice in reading the same special exercises under conditions of controlled eye movements.

There have been other studies of reading under conditions of controlled eye movements and reading under ordinary motivated practice, but none of them has met all the requirements for a completely satisfactory comparative study. These requirements are: (1) three equivalent groups—two experimental and one control, (2) adequate numbers in each group—thirty or more, (3) measures on alternate forms of the same battery of tests for all subjects before and after the period of training, (4) a follow-up study to see whether improvement lasts and whether improvement in reading is followed by an improvement in academic marks, and (5) rigorous insistence that all known factors operating on the groups shall be the same except for the variable experimental method.

In order to meet the last requirement a special piece of apparatus for controlling eye movements was invented that would permit the use of the same exercises in the same size and style of type under the same illumination for the two experimental groups.

Brooklyn College freshmen entering in the spring term of 1942 who fell in the lowest 40 per cent of national norms on the speed-of-comprehension section of the American Council on Education, Cooperative English Test, C-2, Reading Comprehension, Higher Level, were the subjects of this study. Those who participated took two initial tests of reading and two initial tests of intelligence, on the basis of which three equivalent groups were arranged. The two reading tests were the Cooperative Test, mentioned above, and the Traxler High School Reading Test. From the Cooperative Test three measures of reading were taken: vocabulary, speed of comprehension, and level of comprehension. From the Traxler Test two measures of reading were taken: rate of reading and total comprehension.

Group I, composed of forty-five lower freshmen, was given two fifty-minute periods of practice per week for five weeks in reading and taking tests on Strang's *Study Type of Reading Exercises*. Group II, also composed of forty-five lower freshmen, was given the same amount and kind of work on the same exercises, but the exercises were read by means of a device for controlling eye movements. Group III, composed of fifty lower freshmen, attended college but received no special exercises in reading.

*By FREDERICK L. WESTOVER, PH.D. Teachers College, Columbia University, Contributions to Education, No. 917.

At the end of the five-week training period the students were tested on alternate forms of the two reading tests. Six months later they were retested on the Cooperative Test. The grade points earned by the students in each group during the term in which training was given and during the term following training were computed.

RESULTS

At the end of the five-week training period it was found that the two instructional groups made significantly greater gains in rate of reading than the no-exercise group, but that there were no significant differences between the two instructional groups.

In a follow-up study the Cooperative Test was readministered six months after the close of the training period. The gains made by each of the three groups were significant for each of the aspects of reading retested—vocabulary, speed of comprehension, and level of comprehension. There were no significant differences in the gains made by each group except that the controlled-eye-movement group made a significantly greater gain in vocabulary than the no-exercise group.

There were no significant differences in the grade points earned by the three groups either during the term of training or in the term following training.

In brief, the mechanical control of eye movements by means of a specially developed machine did not produce significantly better results in the achievements tested than the same reading exercises used alone. However, even such a brief period of training as that employed in this study, that is, ten fifty-minute periods, did show positive results. In the two instructional groups there were significantly more students who achieved good scholarship marks and fewer students who withdrew from college than in the group receiving no special training.

SPECIAL FEATURES OF THE STUDY

Among the special features of this study are the following:

1. The self-administering method of instruction developed in this investigation. This enables each student to proceed at his own rate without waiting for others.

2. The series of twenty tests on Strang's *Study Type of Reading Exercises.* Each test contains ten objective-type questions. Ten of the tests include exercises in outlining.

3. The description of a new machine for controlling eye movements in reading.

4. The graphic record developed for keeping on one set of coordinates measures of rate of reading, rate of answering questions, and comprehension.

5. The study of extreme cases and the graphic method of examination employed.

6. An innovation in the method of statistical analysis developed in connection with this study by Dr. Helen M. Walker.

7. A follow-up study to measure the durability of the gains secured during training.

Departmental Notes

Institute of Educational Research

DIVISION OF PSYCHOLOGY

Professor Irving Lorge attended a seminar to provide information and exchange of ideas on extension methods, organization, leadership training, local program building and in subject matter fields held in Washington, D. C., February 14. The seminar was conducted by the Extension Service of the U. S. Department of Agriculture in cooperation with the Agricultural Missions, Inc., and the Rural Missions Cooperating Committee of the Foreign Missions Conference of North America. Professor Lorge lectured to the group on "The Psychology of Learning."

Institute of Adult Education

At the request of the Director and Trustees of the Metropolitan Museum of Art, the Institute has undertaken a six months study of the educational resources of the Museum. Professor Morse A. Cartwright is chairman of the Committee on Education appointed by Museum Director Francis H. Taylor to make the survey and will be assisted by Mr. T. R. Adam, research associate in the Institute.

Dr. Andrew Hendrickson, formerly a member of the adult education staff in Teachers College and now assistant dean of Cleveland College, Western Reserve University, was the chairman of a committee representing the various adult education agencies in Cleveland which sponsored an Institute on Adult Education at the Cleveland Hotel, March 1 and 2.

Professor Wilbur C. Hallenbeck spoke on "Social Factors in Adult Learning," and Professor Irving Lorge talked on "The Psychology of the Adult." In summarizing the conference at its closing session, Professor Hallenbeck described adult education as "an indispensable part of our culture" and a way of helping to build American democracy.

The fifth annual conference on "Adult Education and the Negro" was held at Hampton Institute, Va., March 4, 5 and 6. At the opening session Professor Cartwright spoke on "Adult Education in the United States." Professor Hallenbeck led the discussion on "Methods and Materials in Adult Education" during which a presentation of materials developed for Army use was made by ex-sergeant Samuel A. Madden, a student in adult education at Teachers College.

Division I
Foundations of Education

SOCIAL AND PHILOSOPHICAL FOUNDATIONS

William Heard Kilpatrick, professor emeritus of education, is serving as chairman of an advisory committee to the New York City Board of Education which will screen recommendations now being received by the Board in its nation-wide search for the best available successor to Dr. John E. Wade, superintendent of schools, who is scheduled to retire in September, 1947. The

membership of the committee includes Dean William F. Russell of Teachers College; Dr. Willard E. Givens, executive secretary of the NEA; Dr. Ernest O. Melby, Dean of Education of New York University, and Dr. John W. Studebaker, United States Commissioner of Education.

PROFESSORS George S. Counts and Isaac L. Kandel are members of the group of 27 educators invited to visit Japan by General Douglas MacArthur to advise him on revising the Japanese educational system.

PROFESSOR Edmund deS. Brunner was in Cleveland February 28 to March 3 for the meetings of the Rural and American Sociological Societies. He is the immediate past president of the rural group. February 14 through 18 Professor Brunner was in North Carolina where on the 15th he addressed the State Agricultural and Home Economics Extension staff.

AFTER one day's rehabilitation upon his release from active duty as Lieutenant Commander in the U.S.N.R., on February 7, Dr. Kenneth D. Benne taught his first class at Teachers College. He was recently elected regional vice-president of the Veterans' Education Council which is sponsored by the Department of Adult Education of the NEA. At the New York Conference of the AASA, Dr. Benne appeared in the sectional meeting on veterans' education.

PSYCHOLOGICAL FOUNDATIONS AND EDUCATIONAL RESEARCH

PROFESSOR Helen Walker attended the annual meeting of the American Statistical Association in Cleveland, January 23 through 27 where she took part in the deliberations of the Board of Editors of the Association's *Journal*. On this recently-reorganized Board are two former Teachers College students: Dr. Francis Cornell of the U. S. Office of Education and Mr. Oscar Buros of Rutgers University.

Chairman of the National Committee on Data and Trends of the YWCA, Professor Walker attended the national convention of the "Y" in Atlantic City on March 2 through 4. She presided at a hearing on the use in local associations of the data gathered by the national office.

ARRANGEMENTS have been made for students in Professor Percival M. Symonds' class on mental and educational testing to secure experience in selected public schools in New York City. During the first semester 54 students gained experience in ten public schools and three private schools where they administered 810 revised Stanford-Binet mental tests. This semester the class is cooperating in group testing programs in six public grammar schools and several vocational and trade schools.

THE February issue of the *Review of Educational Research* carries an article by Professor George W. Hartmann analyzing the experimental literature pertaining to the "Interrelations of Education and Democracy." Professor Hartmann is also co-editor of *Twentieth Century Psychology* recently published by the Philosophical Library.

He is currently serving as consultant to the Veterans Guidance Center at the Newark, N. J., College of Engineering.

PROFESSOR Arthur T. Jersild lectured recently on child psychology at a meeting of the Patterson Club of Bridgeport, Conn.

THE problems which will face the youth of the 1950's were predicted by Professor Goodwin Watson speaking at the Young People's Work section of the International Council of Religious Education, meeting February 11 at the Deshler-Wallick Hotel in Columbus, Ohio. On March 31 he spoke on "Education for World Citizenship" at the Danbury-Bethel League of Women Voters, Danbury, Conn.

Division II

Organization and Administration of Education

PROFESSOR John K. Norton spoke at the New York regional meeting of the AASA on the financial aspects of "The Needed Design and Its Prospects for the Improvement of Federal-State-Local Relations in Education." He was also chairman of a discussion of "The Teacher as Educator" at the New York conference of the American Education Fellowship held March 23.

PROFESSOR Will French took the nation's schools to task for teaching so little about labor and management relations in a discussion group on what the high schools should teach at the final session of the New York regional meeting of the AASA.

PROFESSOR E. S. Evenden attended the meetings of the American Association of Teachers Colleges held in Cleveland, February 22 through 24, where he participated as a member of the Association's Committee on Standards and Surveys and took part in a panel discussion of "National Leadership in Teacher Education." "Better Teachers for Better Schools" was the topic discussed by a group under Professor Evenden's chairmanship at the New York meeting of the AASA on March 6. Professor Karl W. Bigelow was one of the discussion leaders on this occasion.

"How Can We Get Better Teachers in Our Schools?" was the topic of the February 28 Town Meeting of the Air radio program on which Professor Karl W. Bigelow was a speaker. He is currently serving as a consultant to the committee working on a revision of the senior high school social studies curriculum in the Philadelphia, Pa., public schools. During February the Council on Cooperation in Teacher Education re-elected him chairman at its annual meeting.

The January issue of *Childhood Education* contains an article on "In-service Teacher Education—Implications for Administration and Support" by Professor Bigelow.

Division III

Guidance

PROFESSOR Donald E. Super spoke at the annual meeting of the Jewish Vocational Service at a luncheon at the Hollanden Hotel in Cleveland, March 12, on "Vocational Guidance and Returned Servicemen." The meeting was attended by 125 representatives of local schools and colleges, veterans' organizations, social agencies, federal agencies, employers and labor unions.

At the request of Dr. Oscar J. Kaplan of the University of Idaho, Professor Super is preparing an article on "Intelligence Tests in Vocational Guidance" for the Encyclopedia of Vocational Guidance to be published by the Philosophical Library. He is also collaborating in the preparation of a chapter on "Measurement in Guidance and Counseling" which will be included in an encyclopedic volume on measurement in education to be published by the American Council on Education.

THE Teachers College branch of the National Vocational Guidance Association met on February 25 to hear a panel of speakers representing community social agencies carrying on guidance activities discuss "Vocational Guidance in Action." More than 200 members and guests were present.

Division IV

Instruction

CURRICULUM AND TEACHING

PROFESSOR L. Thomas Hopkins spent the week of March 17 through 23 in the Middle West. He discussed with the administrative staff of the public schools of Des Moines, Iowa their educational plans for the future.

He also met with the Des Moines Association for Childhood Education and spoke on "Today's Children and Their Tomorrow." In St. Louis, Mo., Professor Hopkins spent a day visiting the Lower School of Principia College and the latter part of the week attended the meetings of the Association of Supervision and Curriculum Development.

On March 15 Professor Hopkins attended a session of the twentieth annual spring conference of the Eastern States Association of Professional Schools for Teachers which was held at the Hotel Commodore in New York City. He addressed the group on the topic "What Does a Teacher Need to Know in Order to be Able to be an Effective Member of a Faculty Team in a School?"

PROFESSOR Ernest G. Osborne attended the tenth annual conference of the Teachers Union held at the Hotel Commodore on March 2. The theme for the conference was "Education for the Atomic Age Schools in the Battle for Peace and Security." Professor Osborne was the speaker at a forum on the subject "The Public Schools on Trial."

On March 14 Professor Osborne presided at the annual conference of the Child Study Association which was held at the Hotel Roosevelt in New York City. The title of the conference was "New Vistas in Mental Hygiene."

MRS. Celia Burns Stendler spoke at the Parent-Teacher Meeting at Park Avenue School, Williston Park, Long Island on March 14. Her topic was "Let's Look At Our Schools."

FIVE scholars have been selected by the French government and sent to Teachers College to study for a year in the field of audio-visual instruction. Upon their return to France they are expected to teach audio-visual courses in French teacher training institutions. Dr. Max R. Brunstetter is in charge of their program.

PROFESSOR Hollis L. Caswell attended the meetings of the AASA in Atlanta, Ga., on February 24, 25, and 26. On March 5, at the New York meeting of the AASA, he addressed a group on "Scientific Aids to Education." On March 21, 22, and 23, he attended the meetings of the Association for Supervision and Curriculum Development at St. Louis. He visited the public schools of Denver, Colo., the end of March in connection with the work of the Horace Mann-Lincoln Institute of School Experimentation and the public schools of Peoria, Ill., to work with the supervisors and principals.

PROFESSOR Roma Gans gave the opening lecture in the series on "Education for Democratic Living" in the auditorium of the Hartford Board of Education, Hartford, Conn., on February 12. Her topic was "Do We Have What It Takes to Be Good Citizens?"

ON March 1 Professor Jean Betzner spoke before 150 members of the newly-organized educational association of the Mineola school district, Long Island. She discussed the need for close cooperation between the home and the school.

MATHEMATICS

PROFESSOR William D. Reeve attended the annual meeting of the Board of Directors of the National Council of Teachers of Mathematics at the Hotel Statler in Cleveland, February 21 to 23. He also took part in some of the discussions of the program.

PROFESSOR Carl N. Shuster was one of the speakers at the same meeting. He spoke on "The Needed Reforms in the Content, Organization and Methods of Teaching Mathematics in Grades Ten to Fourteen."

PROFESSOR Nathan Lazar was the guest speaker at the last dinner meeting of section 11 (mathematics) of the New York Society for the Experimental Study of Edu-

cation at the Men's Faculty Club of Columbia University on Friday evening, March 1. His topic was "Invalidity of the Analysis of the Indirect Proof in Geometry Textbooks."

PROFESSOR John R. Clark was guest speaker at a meeting of the Association of Teachers of Mathematics which took place at Washington Irving High School, Tarrytown, New York, March 16.

ENGLISH AND FOREIGN LANGUAGES

PROFESSOR Lennox Grey met as consultant with the Curriculum Revision Committee in English of the Philadelphia Public Schools in Philadelphia on March 5.

PROFESSOR Frank Callcott has just returned from sabbatical leave for the winter session which he spent on the Texas-Mexican border making a study of the interracial relationships there and comparing present conditions with those that existed in that region 30 years ago when he lived in that part of the country.

Other results of his study include many interesting examples of the interacting influence of English and Spanish as the two languages are spoken on the border, as well as a number of sketches and drawings to be worked up later into finished pictures.

MUSIC EDUCATION

PROFESSORS Raymond Burrows and Anthony J. Loudis gave a two piano recital at Illinois State Normal University in Normal, Ill., on April 8. Later in the week they appeared at Ricks College in Rexburg, Idaho, and at the Utah State Agricultural College in Logan, Utah.

PROFESSOR Howard A. Murphy as chairman of the Music Educators National Conference Committee on Contemporary Music in the U.S.A. was in charge of the general session of the conference meeting in Cleveland on April 1.

HOME ECONOMICS

PROFESSORS Clara Taylor and Orea Pye spent January 28 and 29 in Boston visiting the Nutrition Laboratory of Carnegie Institution of Washington, the Nutrition Laboratory of the Harvard School of Public Health, the Harvard Fatigue Laboratory, and Simmons College. Since their return, the Nutrition Laboratory of Carnegie Institution of Washington has presented the Nutrition Laboratory of Teachers College with some special apparatus for use in connection with the research project on the energy metabolism of children.

HEALTH AND PHYSICAL EDUCATION

PROFESSOR Clifford L. Brownell addressed the general session of the annual convention of the Midwest Association for Health, Physical Education and Recreation at Columbus, Ohio, on March 20 on the subject, "Trademarks of a Profession."

ON March 9 Professor Charles C. Wilson acted as discussion leader on the topic, "Preparation of Teachers for the Education of the Exceptional," for the convention of the International Council for Exceptional Children held in Detroit from March 7 through 9. Dr. Florence Dunlop, national chairman of the organization and a member of the summer staff, as well as Dr. Elizabeth M. Kelley and Dr. Berthold Lowenfeld of the current staff, participated in the program. The Council was organized at Teachers College in 1922.

Professor Wilson also attended the Health Education Institute conducted by the Massachusetts Tuberculosis League at Simmons College, Boston, on February 25 where he spoke on "Basic Principles of School Health Education."

PROFESSOR Josephine L. Rathbone took part in the annual convention of the American Physiology Association in Atlantic City on

March 10. She also spoke at Mount Holyoke College, South Hadley, Mass., on "Opportunities in Physical Therapy" February 27.

Division V
Nursing Education

PROFESSOR Isabel M. Stewart addressed the New Jersey State League of Nursing Education at its February meeting. She spoke on "Recent Developments in Nursing in Great Britain and Other European Countries."

THIS spring the division has added two lecturers in public health to its staff: Dr. Earle G. Brown, Commissioner of the Department of Health of Nassau County, who has had extensive experience as a Health Officer in Kansas and Virginia before coming to Nassau County and who is active in several medical and public health associations, and Dr. Joseph H. Kinnaman, Deputy Commissioner of the Department of Health of Nassau County, who has worked in departments of health in various sections of the United States.

ANNIE W. Goodrich, dean emeritus of the Yale School of Nursing and assistant professor of nursing education at Teachers College from 1904 to 1923, was guest of honor at a testimonial luncheon at the Waldorf-Astoria, New York, February 26 in recognition of her significant contribution to American health. The luncheon, sponsored by the American Journal of Nursing and held on the occasion of her eightieth birthday, inaugurated a nation-wide campaign to achieve better integration in the nursing profession toward an improved pattern of health care.

The Library

PUBLICATION of the *Library Consultant Service Leaflet* has been resumed. Issues in the Second Series which have appeared so far are:

No. 1. 1946 What Books Have Been Published in the United States?
No. 2. 1946 Bibliographical Form
No. 3. 1946 Footnotes
No. 4. 1946 Theses and Research Studies

Price, 5 cents each.

Fellowship Announcement

Pi Lambda Theta announces two awards of $400 each, to be granted on or before August 15, 1946, for significant research studies on "Professional Problems of Women." A study may be submitted by any individual, whether or not engaged at present in educational work, or by any chapter of group of members of Pi Lambda Theta. Further details may be obtained from Professor Helen Walker at Teachers College.

Office of Field Relations and Placement*

The following recent appointments of Teachers College Alumni are reported by the Office of Field Relations and Placement:

Belcher, Wyatt W., instructor in political science, Oklahoma Agricultural & Mechanical College, Stillwater, Okla.

Berry, Orrietta C. (A.M. 1941), sixth grade demonstration teacher, Lanning School, New Jersey State Teachers College, Trenton, N. J.

Bloom, John H., director of conservatory of music, Muskingum College, New Concord, Ohio.

Bond, Elden A. (Ph.D. 1940), supervisor of education for handicapped children, State Department of Public Instruction, Olympia, Wash.

Braun, Margaret R. (B.S. 1939), staff nutritionist, Red Cross, New York, N. Y.

*Any student who is taking or has taken twelve points of work at Teachers College or any graduate of Teachers College may register with the Office of Field Relations and Placement. For initial registrations covering three years, no fee is charged. For information write to the Placement Office for its booklet, *Employment of Teachers and Administrators.*

Britton, Ernest R., superintendent of schools, Public Schools, Midland, Mich.

Burns, Mary Helen (A.M. 1945), social director, Woman's Hall, West Virginia University, Morgantown, W. Va.

Cady, Helen Josefin (A.M. 1944), assistant professor of art, New York State College of Home Economics, Cornell University, Ithaca, N. Y.

Calitri, Junius B. (A.M. 1945), vice principal and physical director, Virgil Central School, Cortland, N. Y.

Cameron, Jessie (A.M. 1930), assistant professor of physical education, Alabama College, Montevallo, Ala.

Cerrone, John J. (A.M. 1941), instructor in physical education State Teachers College, Cortland, N. Y.

Clark, Harold E. (B.S. 1941), assistant field director, American Red Cross, Paris, France.

Clifford, Robert E., teacher of social studies, Washington Irving High School, Tarrytown, N. Y.

Davis, Emily H. (A.M. 1929), head of department of art, University of Akron, Akron, Ohio.

Dickson, Thelma Elizabeth, teacher of mathematics, High School, Old Lyme, Conn.

Eldridge, Elizabeth Hewes, executive housekeeper, Ogontz Junior College for Girls, Ogontz, Pa.

Fisher, Mary Loretta (A.M. 1944), second grade critic teacher, State Teachers College, Platteville, Wis.

Garland, Philip L. (A.M. 1935), headmaster, Carteret School, West Orange, N. J.

Geiger, John William, band and orchestra director, Junior and Senior High Schools, Bessemer, Ala.

Haeussermann, Else J., kindergarten teacher, Lower East Side Health Center, New York, N. Y.

Haslow, Elizabeth Frances, instructor in voice, Southeastern Louisiana College, Hammond, La.

Herrick, Leslie P., teacher of four year old group, Walt Whitman School, New York, N. Y.

Hopkins, Laura W., teacher of first grade, Unquowa School, Fairfield, Conn.

Krug, Helen E. (A.M. 1931), supervisor of fourth grade, Demonstration School, State Teachers College, East Stroudsburg, Pa.

Limbach, Alberta E. (B.S. 1939), dietitian, William Woods College, Fulton, Mo.

Melton, Orma (A.M. 1944), director of student personnel, Monticello College, Alton, Ill.

Mileham, James W. (A.M. 1935), part time instructor in science, New Jersey State Teachers College, Upper Montclair, N. J.

Parrott, Irene A., assistant housekeeper, Ritz Carlton Hotel, New York, N. Y.

Passmore, Margery, librarian, Lankenau Hospital, Philadelphia, Pa.

Poruben, Adam, Jr. (Ed.D. 1943), research associate, Encyclopaedia Britannica Films, Inc., New York, N. Y.

Rees, Helen Evangeline (Ed.D. 1941), assistant professor of education, Smith College, Northampton, Mass.

Robbins, Stella M. (A.M. 1937), supervisor of practice teaching, Monmouth Training School, Oregon College of Education, Monmouth, Ore.

Schmitt, Kathleen Knittle (A.M. 1938), field adviser, Girl Scouts, Kansas City, Mo.

Sisson, Katherine, teacher of fourth grade, Wappingers Central School, Wappingers Falls, N. Y.

Sobel, Astra (A.M. 1946), instructor in music, Elementary School, Ocean Grove, N. J.

Spain, Charles R. (Ed.D. 1941), associate professor of education, University of Kentucky, Lexington, Ky.

Wagner, Eva Bond (Ph.D 1938), psychologist, Vocation Advisory Service, New York, N. Y.

Wilt, Ralph W. (B.S. 1945), commercial teacher, High School, Medina, N. Y.

Wolff, Alfred R. (A.M. 1940), teacher of social studies and guidance, The Park School, Baltimore, Md.

Alumni Activities

SARAH G. BLANDING, former graduate student at Teachers College, has been elected president of Vassar College, Poughkeepsie, N. Y., and will assume her new post July 1. She is the first woman to be named head of that institution.

Dean of the State College of Home Economics at Cornell University, Ithaca, N. Y., for five years, Miss Blanding served on the New York State Emergency Food Commission as director of the Human Nutrition Division and was the only woman on the Joint Army and Navy Committee on Welfare and Recreation.

Miss Blanding received her B.A. degree from the University of Kentucky, Lexington, Ky., in 1923, and her A.M. degree from Columbia University in 1926. She returned to the University of Kentucky in 1929 where she served as dean of women and associate professor of political science until 1941.

ANNA DUNSER (A.M. 1933), director of art in Maplewood-Richmond Heights Schools, Maplewood, Mo., is the author of an article in the February issue of *The Instructor*.

INA F. VAN NOPPEN (Ed.D. 1937) has been appointed to the Youngstown College faculty, Youngstown, Ohio, as an instructor in the social science department. Mrs. Van Noppen comes to this position from Hiram College, Hiram, Ohio.

MURIEL L. THOMAS (Ed.D. 1945) is the new director of nurses and principal of the Deaconess Hospital School of Nursing, Buffalo, N. Y.

BEN JOHNSON (A.M. 1934), musical director at Wentworth Military Academy and the Lexington, Mo., High School, spoke to the Lexington Rotary Club recently on "The Value of Music in Community Life."

MARGARET BARKER (Ph.D. 1930) has left her position as director of personnel at State Teachers College, Oneonta, N. Y., to become a professor of special education at Southwest Texas State College, San Marcos, Tex. In her new capacity, Dr. Barker will supervise training courses for teachers of exceptional children and will act as consultant in some phases of their work.

E. BEULAH WINSTON (Ed.D. 1944) was in charge of the work in "Principles and Practices of Guidance" at the 1945 summer session of Atlanta University's School of Education.

VERA E. PERKINS (A.M. 1939) has an article published in the February issue of *The Instructor* under the pen name of Vera Eggleston. In her article, Mrs. Perkins, a fourth grade teacher in the Henry Smothers School, Washington, D. C., tells of the instruments her music appreciation class improvised from milk bottles, cigar boxes, tire tubes, old violin string and other discarded items.

MARGARET E. BRENNAN (A.M. 1942) was recently appointed supervisor of home economics in charge of cafeterias for the Newark, N. J., Board of Education. During the three years in which she served as assistant supervisor, Miss Brennan set up cafeterias in 22 schools and eight child care centers.

N. Eldred Bingham (Ph.D. 1939) is now an associate professor of education in the teaching of science at Northwestern University, Evanston, Ill.

Joseph Wei Ai (A.M. 1922), director general of the Institute of Educational Psychology, National Central University, Chungking, China, has an article "Correlations of Intelligence, Achievements and Physical Conditions of Elementary School Children" in a recent issue of *The Chinese Journal of Educational Psychology*.

Agnes E. Salisbury (B.S. 1938) has been appointed state counselor and assistant executive secretary for the Connecticut State Nurses Association with headquarters in Hartford, Conn. Miss Salisbury's appointment is in conjunction with a new professional counseling and placement program which the Association is undertaking.

R. B. Marston (A.M. 1924), director of the legislative-federal relations division of the National Education Association, was guest speaker at a meeting of the Bangor, Me., Teachers Club recently.

Helen L. Bunge (A.M. 1936), at present associate professor at Frances Payne Bolton School of Nursing, Cleveland, Ohio, will succeed to the deanship of the School in June 1946, when the present incumbent retires.

Philip B. Lottich (A.M. 1938) is serving as counselor for men at the University of Hawaii, Honolulu, T. H.

Louise Abney (A.M. 1930), visiting lecturer in speech at Smith College, Northampton, Mass., is represented in the February issue of *The Instructor* by an article, "Prevalent Faults in Speech."

Everett B. Sackett (Ph.D. 1931) was appointed to the newly-created position of dean of student administration at the University of New Hampshire, Durham, N. H., on March 4.

Anne Brown, former graduate student in music at Teachers College, was a guest soloist with the Detroit Symphony Orchestra at the Masonic Temple in Detroit, Mich., recently.

John J. Van Noppen (Ed.D. 1941) is now head of the department of education at Hiram College, Hiram, Ohio.

Louise L. Cady, former Teachers College graduate student and now consultant in tuberculosis nursing of the National Organization of Public Health Nursing, addressed the third session of the institute for public health nurses in Atlanta, Ga., in February.

Dorothy R. Abel (A.M. 1945) has arrived in the Philippines to serve as an American Red Cross staff assistant. Prior to this appointment, Miss Abel was a teacher in Bushwick High School, Brooklyn.

Emery N. Ferriso, former graduate student at Teachers College and a professor of education at Cornell University, died at his home in Ithaca, N. Y., January 8.

Kathleen Moore, former graduate student at Teachers College, has been named a member of the Kentucky Committee on Elementary Education. This Committee will cooperate with the Southern States Work Conference in a study of southern elementary education. Miss Moore has been an assistant professor of education at Union College, Barbourville, Ky., since 1937.

Lucile Petry, former graduate student at Teachers College, has been appointed chief of the new division of nursing of the Public Health Service, according to an announcement made by Surgeon General Thomas Parran. One of the first nurses commissioned in the service, Miss Petry will retain

her rank of nurse director, equivalent to that of colonel in the Army. She has been with the Public Health Service since 1931, and was named director of nurse education when the corps was established in July, 1943.

CHARLOTTE WHITE (B.S. 1904) is teaching a class for handicapped children at P.S. 219, Brooklyn, N. Y.

PATRICIA BEESLEY IRWIN (Ph.D. 1940) has been promoted to the rank of assistant professor of English at Ithaca College, Ithaca, N. Y. Mrs. Irwin joined the faculty as a part-time instructor last September.

CLARA B. WEIR (A.M. 1933) is now an assistant professor of speech at the same institution.

NORMAN COUSINS, former student at Teachers College and editor of the *Saturday Review of Literature*, is the author of a provocative essay entitled, "Modern Man Is Obsolete."

GEORGE J. GRECO (A.M. 1941) recently became Director of the new cooperative educational program of the Dominican Republic in conjunction with the Inter-American Educational Foundation. Formerly Supervisor of English in the Ministry of Education, Mr. Greco was responsible for the project under which the number of students studying English in schools of the Republic has grown from 19,000 to 27,000 in the last three years.

ANDREA J. MAGNUS, who has completed several summer sessions at Teachers College, is a dependent groups specialist in the Welfare Department of UNRRA's China Program and left for Shanghai with 40 other UNRRA specialists on the *SS General Scott* which sailed recently from Seattle.

CLARE SPERRY, former student at Teachers College, is working as an American Red Cross staff assistant in the Southwest Pacific Area.